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GLEANINGS IN BEE CULTURE

A JOURNAL DEVOTED
TO BEES
AND HONEY
AND HOME
INTERESTS.

ILLUSTRATED
SEMI-MONTHLY

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STRAY STRAWS FROM DR. C. C. MILLER.

"APPLICATIONS of honey," says a medical quarterly, "are said to quickly relieve the pain and abort the attack in erysipelas of the face."

PROPER SPACING is clearly reasoned out on p. 498 to be just $1\frac{1}{2}$ inches, while Doolittle, in *A. B. J.*, reasons out just as clearly that it should be $1\frac{1}{2}$; $1\frac{1}{2}$ is a pretty fair compromise.

"THE VERY BLACKEST old comb you may have," says R. C. Aikin, in *Am. Bee J.*, "will give a bright wax from the solar; but if put through water it will be very dark. [Quite right, according to our experience.—ED.]

LAST NUMBER of GLEANINGS, in its editorials, smacks strongly of practical work in the apiary. Wish its editor could be kept there about all the time. [I wish so too; but I am in the apiary more than you are perhaps aware.—ED.]

I WOULD GIVE a dollar a pound for some nails of the right kind to use for spacers on brood-frames—wire nails $1\frac{1}{4}$ long or less, with heads $\frac{1}{4}$ inch thick and $\frac{3}{8}$ across. [What do you mean by "right kind"? We'll take a contract for a few thousand pounds. Be generous in your order.—ED.]

A DECIDED ADVANTAGE it is to be able to dispense with honey-boards—saves time and muss. But I'm afraid there's one disadvantage. I'm afraid queens will go into sections oftener without honey-boards. But even if honey-boards must be used, I'd want thick top-bars with them, $\frac{3}{8}$ thick at that.

SWEET CLOVER can never, I think, take the place of white clover as a honey-plant, and we may as well know it first as last—just because sweet-clover honey can never take the place of white-clover honey on the market. Some will like it better than white clover, but others will not like it at all. [If white clover can not be had, sweet clover would be a most excellent substitute, at all events.—ED.]

R. C. AIKIN reports in *A. B. Journal*, that, in the solar extractor, 100 Langstroth combs yield from 17 to 20 pounds of wax. That means about $1\frac{1}{2}$ pounds of wax for an 8-frame hive. [This would be quite a large amount of wax from old comb, according to our experience. Perhaps Mr. A.'s combs were not very old.—ED.]

E. E. HASTY, the *Review* reviewer, says, "I have a sneaking notion that the current impersonality of editors is an error and a nuisance—a nuisance which is tolerated, not for its own sake, but because it renders impossible the much worse nuisance of editorial garrulity and self-parading." He thinks both evils should be avoided, and the golden mean taken.

A GOOD SCRATCHER to scratch the surface of sealed honey so as to get the bees to empty it out is made of a piece of heavy wire cloth, three meshes to the inch. Possibly five to the inch would be better. Take a piece three or four inches square, and you'll find the edge where it is cut off just the thing to rake the surface.

BEES DEFY all rules sometimes. To-day I found in a hive post-constructed queen-cells and queen-cells containing pollen. Either one of these ought to be taken as good proof of queenlessness; but a laying queen was in the hive doing good work. [We may first as well as last set it down as an axiom, that bees never do any thing invariably.—ED.]

SKYLARK says, p. 489, that "once more" the Chicago market is opened up for Californians, still implying that his former charge against me was correct. Say, Skylark, wouldn't it be the square thing for you to come out like a man and say that you were in the wrong, and that I had never whispered a word against Californians camping right down in the Chicago market?

IT'S ALL VERY WELL, Mr. Editor, for you to suggest warmer weather as a remedy for the trouble of bee-glue with tin rabbits; but you don't send out an assortment of weather with the rabbits; and work has to be done, weather.

or no weather. Let's have things to fit cool weather, and they'll be all right for hot weather. [But the far greater part of that work *can* be done in warm weather, just the same'e.—Ed.]

"RAISE NONE—not one," is W. K. Morrison's dictum as to drones, p. 497. But do you realize that one-third of your queens are superseded each year, friend M.? and that means you must have some drones in the apiary, and drones are free commoners, going from one hive to another. Even if you raise "not one" drone, they'll enter your hives from your neighbors' bees. [Hadh't thought of this point before. That alone would make the no-drone theory of non-swarming impracticable.—Ed.]

THICKNESS OF COMB is given, p. 498, as $\frac{8.5}{100}$ inch. But in measuring for spacing, the thickness taken should be that of comb containing capped worker brood, and Doolittle says the capping adds a full eighth of an inch to the thickness, and worker comb used for the first time measures an inch when capped. Then remember that comb thickens with use, old comb measuring an inch without capping. So old comb capped would measure $1\frac{1}{8}$, and a iding $\frac{1.5}{100}$ space would make just about $1\frac{1}{4}$.

PROF. COOK relates in *A. B. J.* that he received from four different States honey reported to be poisonous. He ate freely of it, and is still living. [We have had a good many articles from good bee-keepers, taking the ground that some honey is poisonous. Among these writers is no less a person than Dr. J. P. H. Brown. Prof. Cook's article seems convincing, and yet I'd like to hear from others, both for and against the theory or fact of honey being poisonous. This is a matter that should be decided right.—Ed.]

"WHITE CLOVER seems to have run out for the last four or five years," says the editor, p. 502. You may be pleasantly disappointed. Last year there were scarcely any white-clover plants to be seen in this region, while this year the ocean of bloom beats the record for the past 25 years. I don't know where the plants came from, but they're there. [If white clover will only *run* in again, no matter where it comes from, I shall be *most agreeably* surprised. I infer in your case you'll have white-clover honey.—Ed.]

THICK TOP-BARS with proper spacing are a success in preventing burr-combs. No mistake about it. In some cases where honey was daubed between the supers, all was left clean over the top-bars. [Some bee-keepers strangely seem disinclined to accept the fact of there being few or no burr combs with the right kind of top-bars. History repeats itself. When Daguerre said he could and did make an image permanent on a looking-glass, it was disbelieved and even laughed at as an impossibility.

X rays are another example of the same perversity in human nature.—Ed.]

CASES ARE REPORTED in which swarms have issued with no sign of a queen-cell in the hive. I'm inclined to be mildly skeptical about this; at least, I have some doubt about such a case occurring unless the bee-keeper had baffled the intentions of the bees by previously removing queen-cells. The more bees are thwarted as to swarming, the more determined they sometimes are; and I can imagine their getting mad enough to swarm with no sign of a queen-cell. I've had many a case in which there was nothing further than an egg in a queen-cell.



H. E. Wilder is now foul-brood inspector for Riverside Co., Cal. I have no doubt the disease will have to seek other fields.

Pres. W. T. Richardson has so far recovered as to return to his home in Simi country. His accident detained him at Bro. Touchton's five weeks.

In a few instances, where the bee-keeper is in the same condition that his bees are, the man has to rustle for grub for himself, and the bees die.

It is currently reported that the X ray will destroy diphtheria germs. If that proves to be a fact, let us turn the rays upon foul brood. There is a wide field for making it useful in this State.

We hear now and then of a bee-keeper who feeds from one tank in the open air. That's a short cut, perhaps; but the result is any quantity of dead bees in the feeder. Near-by bee-keepers also are benefited.

We can put down another disastrous honey season for Southern California. From present appearances there will be scarcely a carload produced south of the Tehachapi. Bees are in a starving condition on many ranches, and feeding is the order of the hour.

Mr. Brodbeck, of Los Angeles, is a firm believer in the efficacy of bee-poison in the cure of rheumatism and boils. During the past winter he has been greatly afflicted with both maladies; but now, after a few weeks in the apiary, and a free reception of stings, boils and rheumatism are both banished.

In a recent letter a noted bee-keeper in Oakland, Cal., thus discourses upon queen-rearing: "That scheme of raising queens on the island may be a good one. It may be that this State can cut Italy out on the score of raising the best Italian blood in the world. I know that

the Italian girls raised in this State are as fine looking as one would wish to see."□The idea of linking Italian girls with Italian queens shows that something is radically wrong with the eyes and inclinations of my sedate and old-time traveling companion.



ARE WE ALL CRIPPLES, INVALIDS, AND CONSTITUTIONALLY WEAK?

Yes, Somnambulist, I heard and noted the philippic given out by E. T. Abbott, in *A. B. Journal*, but I had not time just then to attend to *him*, being away up at Newhall taking care of my fame.□Friend Abbott says:

Honey-producers, falling in with the general drift of things in these times, seem to have the idea that there is only one road to success, and that is by having the government or some combination of men do for them what they confess, by their theories, they are not able to do for themselves—namely, make life a success in their chosen calling.

The man who enjoys the privilege of these God-given blessings (health and being let alone) should be able to at least hold his own and keep his head above water. If he is not, it will only be an application of the doctrine of the survival of the fittest to let him go under. Crutches and government help should be reserved for invalids, cripples, and the constitutionally weak.

□I never expected such an article as this from E. T. Abbott. Being a man of letters, I did not look for any thing so wicked—no, no!—so frivolous; no, that's not the word either—so childish as this. Yes, friend Abbott, we *have* "fallen in with the general drift of things," and we *do* have the idea that "there is but one road to success." So far you are right, and have described the situation exactly. But when you say that we believe that road to success is to "get the government or some combination of men to do for us what we confess we can not do for ourselves," you are all wrong. Did any one ever ask the government to raise the price of honey, or to furnish supplies at wholesale prices? I trow not. But this is just what's the matter with us. Middlemen pile on the profits on the supplies until the expenses come to almost half the honey. There was some talk of getting the government to import *Apis dorsata*. Were the advocates of this measure "constitutionally weak, invalids, or cripples?" What writer has asked "some combination of men to do for us what we confess we can not do for ourselves"? Not one—not even a single cripple! This is a misleading statement. We do not confess any such thing, and never did confess it, either by theory or action. On the contrary, we claim that we *are able* to right our own wrongs by combination and union among ourselves. We do not ask "some combination of men" to help us, and never did. It

is a rather bold insinuation—in fact, almost amounting to an assertion—that all who favor combination and union for self-defense and protection are either invalids, cripples, or constitutionally weak. What has built our great canals, and locked and dammed our rivers? Combinations among the cripples that didn't want to be let alone. What has dug and drilled and blasted out hundreds of miles of tunnels in search of the precious metals, until the Sierra Nevada and the Rocky Mountains have become catacombs as famous as those of Egypt or the *Via Appia*? The combination of the cripples who *didn't* "want to be let alone." What has built our telegraphs, telephones, and our thousands upon thousands of miles of railroads? Combination of the cripples who didn't want to be let alone. What has built and endowed our great institutions of learning that are the pride and the crowning glory of America? It was the combination, union, and organization of the "cripples, invalids, and constitutionally weak," who had no ambition "to be let alone." What is this great government of the United States, "of the people, for the people, and by the people," but a combination—a union and organization of millions of men for self-protection? Are we all "invalids, cripples, or constitutionally weak?" I pause for a reply.

HON. J. M. HAMBAUGH.

I have had the pleasure of making the acquaintance of the Hon. J. M. Hambaugh. I visited him and his interesting and excellent family, and they have enjoyed the hospitality of my mountain home. We had a long and interesting talk on bees, of course. Mr. Hambaugh was rather astonished when I told him we had but one flow of honey here, but that that continued from the beginning of the early spring until it finally closed up, as a general thing, in July. An eastern man has a good deal to learn when he comes out here to keep bees. You see, *we know something*. The first thing, however, that he learns—and the knowledge is quickly acquired—is the vast difference between the head and the tail of the bee. Any one can find that out in ten minutes, and not half try, and without a single bale of undeveloped intellect at that.

Mr. Hambaugh has been a member of the Illinois Legislature, and probably left the State for fear of committing a second offense. That's the way you see all the good people come to California. Friend Hambaugh is good because he wants to reform. I am not one of those who believe a man should be snubbed just because he has been a member of the legislature. Give him a chance to recover from the shock and retrieve his reputation. You wouldn't like it if you had just got out and nobody would speak to you. But I'll bet that Hambaugh was a wide-awake and a jolly prisoner while he *was* in, anyhow.

THE SEASON IN THE EAST.

I take the following high-flowing and boastful announcements from the bee-papers of the East for June: "Good prospects for a great crop;" "rolling in sweets;" "just rolling in the honey;" "bountiful crops expected;" "bright prospects;" "good honey crop expected;" "bees booming;" "a successful season expected;" "heaviest flow I ever saw." Do you expect us, Mr. Editor, to sit here quietly and have such insults thrown across the continent at us—thrown into our very faces? Well, go on. Inscribe them on your banners and your transparencies, and go out on your torchlight processions. We don't care. "Won't *we* go along?" No, we won't, and we don't torchlight in the same year with you. Besides, we prefer to select our own company. "You didn't say any thing to us." No, but we can take a hint. Every eye is turned on the Pacific Coast. Is there any thing loud in our quiet and dignified contentment? Aren't we as calm as the unruffled sea? Have a care how you conduct yourselves on your triumphal marches. Don't reflect on us. Don't say, "I told you so." Don't taunt us. The slumbering fires of our indignation may break forth at any time. We won't be responsible. I wouldn't care, anyway, if you *would* make a whole lot of bug-juice. I'm just mad.



APIS DORSATA NOT UNDESIRABLE.

THEIR PRACTICAL VALUE FOR THE UNITED STATES; OTHER RACES OF BEES.

By W. K. Morrison.

The editor of GLEANINGS is anxious to know something about my way of securing *Apis dorsata* for the purpose of attempting its domestication. In the first place, I hope, for the general good of bee-keeping, that a staid, respectable journal like GLEANINGS will never again make the statement that it did a few weeks ago about *Apis dorsata* changing the flora of America. Such a statement appears like a sound from the Dark Ages. What! even the savage would not believe such a statement. Suppose a fruit-grower applies to the Governor of Ohio for protection against the bee-keepers of his State, saying the bees mix up his apples and his strawberries, his pears and his persimmons, etc. Why, it pains me to discuss such nonsense. Are the readers of this paper aware that there are some 3000 species of bees in existence? These have been working through all the ages, and, so far as we can see, have never changed the flora of any country one iota.

The honey-bee has been at work in the United States some time now, and I fail to see that it has changed one single flower as yet. I know it would stagger the mind of most of your readers to be told how many species of bees there are in the United States. Now, it is to be hoped this sort of thing will be dropped. Talk about Prof. Wiley's lie—this one knocks it completely into the shade. Prof. W. can now poke all the fun he chooses at us.

Let us discuss a pleasanter subject. Most of your readers who write about *Apis dorsata* seem to take it for granted that it is the only bee capable of domestication; but this is a mistake, as other species are actually kept by the natives of these eastern countries. We have pretty accurate information of the following bees:

Apis Dorsata (natives make a business of its honey).

Apis Zonata (natives make a business of its honey).

Apis Indica (kept in hives).

Apis Bhotan (kept in hives).

Apis Unicorn (kept in hives).

Apis Mellifica (the one we cultivate).

Some bees of Central and South America have been partially domesticated. I know I saw notices of a certain species of *Trigona* as having been imported into the United States, but they were very far removed from the domesticated kind. The *Trigona* of the West Indies has some 1000 bees in a nest, while Mr. Stretch, while at Panama, counted a colony of *Melipona* with at least 100,000 bees in it, as he says almost countless, their nest occupying several (6) feet of a large hollow tree, and having large quantities of honey and wax. The bees were like a black cloud. Gardner says in his travels (giving a long list of *Melipona*), that, in the provinces of Piauhy and Goyaz, he found bees very numerous. In every house they have the honey of these bees. Many species, he says, build in the hollow of trees, others in banks; some suspend their nests from branches of trees, while one species makes its nest of clay, the honey of this species being very good.

Mr. Guerin found one of these nests with six queens (*Melipona fulvipes*). Bates, no mean observer, brought back from the Amazon 45 species of *Melipona*, mostly new species.

I know some editors of bee-papers who gravely discuss the uses of *Trigona* and *Melipona*, and who evidently do not know the meaning of the word "species." I see advertisements in GLEANINGS like this: "For sale—hybrid bees, \$4.00 a hive." Now, friends, this isn't so. Nobody has hybrid bees in the United States as yet. Wait till we get *Dorsata* or *Indica* here, and there may be a chance to get hybrids.

One of the most painful reflections about the recent death of the great Langstroth is the

fact that there is no one to take his place as an author and student in apiculture. I know of editors of bee-papers who have never read Reaumur's work, the foundation-stone of bee culture. All these things make it difficult to convey to the average bee-keeper just what chances there are of improving practical apiculture by introducing new *species* (not races) of bees. The domestic animals of the United States are all introductions; and the introduction of *Apis dorsata* would probably, in my opinion, be of more importance than either ostriches or reindeer.

The more we diversify our business, the more likely we are to succeed. The introduction of a new species of bees would give us a standing in the eyes of the world we do not now possess. What I should expect from *Apis dorsata* would be:

1. A larger number of flowers visited having deep nectaries.
2. A larger area covered by its greater power of flight.
3. More wax produced.
4. Honey to come to us now going to bumble-bees.
5. A greater power to take care of itself against wasps, etc.

It is, of course, problematical somewhat as to what would be the greatest advantage till we know more about them. Certain it is, they are valuable, and compare favorably with *Mellifica*. I should be discouraged if I did not know how our own honey-bee behaves in the tropics. It is often said that *dorsata* is migratory in its habits; but our own honey-bee does the same thing pretty much. This is news, but it is a fact. A bee-tree is not a bee-tree very long in the tropics. When the rainy seasons come, enemies of all sorts come to eat their honey and wax, till, in sheer exasperation, evidently, the colony decamps, leaving his abode in the hands of its enemies. Bees in the tropics get no peace.

It may strike your readers as very strange, but flowers are scarce in the tropics. I suppose that Ontario is a better place for flowers than Brazil, under the equator. One of the lies we are taught in childhood is that tropical countries have lots of flowers. Dr. Miller would find wintering quite a problem in the equator—just as much so as in Illinois. For months the bees get hardly an ounce of honey. Then they are annoyed by swarms of ants, termites, and moths.

Then *Apis dorsata* is accused of working nights. So does *Mellifica*. Bees in the tropics work nights and mornings only, for the very good reason that the vertical sun evaporates all the nectar out of the tubes in the middle of the day. My own bees used to fly around moonlight nights in the tropics, and no wonder; for a moonlight night in Capricorn is superb; but I could never discover that they did

any thing nights. On the eastern side of the Andes the little rivulets trickle down the mountain side till about 10 or 11 A. M., then stop altogether for the day. This is about the time bees stop till about 4 P. M., when work is resumed.

Lately *dorsata* was accused of being a great stinger; but among a certain class our own pet has a similar name.

A great amount of data has been collected about the bees of India; and the government of India has published a book about the bees of India that are kept in hives. If we can't do any better we can get the bees the natives have, and try them.

The bees of Bhotan are kept in hives, and are different from ours. It seems to me that, if these natives, with their rude hives, can keep these bees, we ought to do a *little* better.

The reports furnished to the government of India show that the bees of that country suffer from moths and men chiefly. They do not cultivate our bees—only Europeans do this. Our bees do not mix with theirs.

Bermuda.

[Our correspondent, Mr. Morrison, in his first paragraph, must surely have misunderstood me in what I said concerning *Apis dorsata*, on pages 390 and 396. On neither page did I say any thing about their "changing the flora" of America. The nearest approach to it was that they would be "out of harmony with the general flora of America," and this was but endorsing the opinion of that scientist and an authority, Mr. Frank R. Cheshire, whom I had just been quoting.

We have permitted the use of the term "hybrids" when referring to crosses between blacks and Italians, simply because it had become generally accepted. And in the same way we have permitted the use of the term "fertile workers" when we meant "laying workers," just the same as everybody speaks about the sun rising, when, in fact, it does not rise at all; or when we say the tea-kettle boils, when it is only the water in it to which we refer; or when we say the eaves drip, when it is only the water running from them. Even if we were to change the term "hybrid" to "cross," bee keepers all over the country would be continually using the term they were long accustomed to. As to the term "races of bees," it is not any worse than that commonly accepted by the whole human family when it refers to "races of men." If we must stop using the term "races of bees," then our geographies and our general literature must correct themselves in the use of the term African race, Malay race, etc. The Standard dictionary, the latest and best, gives as one of its definitions of race, "A stock or strain as of domestic animals or plants." "Race" as we have used it in reference to bees is correct according to this.

There is a tendency in language to give secondary meanings to words, and these secondary meanings often and even generally intrench themselves in the language of the masses so firmly that strict accuracy would really amount to inaccuracy.

But in reference to *Apis dorsata*, I am willing to take back any thing I said referring to the undesirability of bringing them to this country; and in view of what our correspond-

ent has said in favor of points 1 to 5, it may be well worth our while to get them here.

In our next issue Mr. Morrison will tell of the plan he has for going through the Eastern countries, and how he proposes to carry it out, for, indeed, I believe he is just the man to introduce new races or species into the civilized world; and he will do it, too, providing the bee-keepers stand back of him, even if he does not secure an appropriation from our own national government. He has had wide experience as a traveler, and is well acquainted with all the intricacies and difficulties of travel among semi-barbaric peoples.—Ed.]

BEE-STINGS AND RHEUMATISM.

NOT A CURE, BUT ALMOST A KILL; A SEQUEL
TO MR. HART'S ARTICLE ON PAGE 386;
FUNNY BUT SERIOUS.

By W. Hood.

Editor Gleanings:—Having been an interested reader of your journal for several years, especially the portion dedicated to A. I. Root and his garden, I usually welcome it on arrival as one of the family. In your May 15th number I was highly interested in reading pages 386, '7, from the pens of Hart and Hendrickson, in regard to bees and rheumatism. After reading of the miraculous cure I almost felt like shouting "Eureka," for here was found a lightning-like cure that would knock out Electropoise and give "Pink Pills" a black eye in the first round, while I, in blissful ignorance of the medicinal qualities contained within the peaked end of the busy bee, had been chasing rheumatic pains up and down my leg with a bottle of liniment, and rubbing it in until the cuticle was almost worn away instead of applying a very small portion of the forty swarms out in the back yard, all of which, with the slightest provocation, would be more than willing to sacrifice their lives in my behalf.

Now, Mr. Editor, I am not writing this to air my apiary, nor to lay my sorrows before the public, but that others who may read it may be benefited by my experience as well as the experience of those who have been cured by bee-stings.

Some four years ago I spent the winter in the much-lauded State of Florida, and ever since then have been troubled some with rheumatism; but it never really settled down to business until about three months ago, when it located in the hip joint as a permanent settler, spreading out as occasion offered until it reached the end of my toes. In its infancy I got along nicely by wearing a cane; but as its growth increased I felt it very convenient to add a crutch to my outfit, and by so doing we got along nicely together. In all my wanderings it was my constant companion, reminding me that I was not so young as I used to be.

After a month or so of rather close companionship, the portion extending out beyond my toes got broken off, or at least I lost it some-

where, and felt so much better that I laid away the crutch and continued to hobble around the garden and greenhouse with the cane. About this time GLEANINGS wafted to me the good news found on pages 386, '7, and before retiring that night I promised myself that I would cure that rheumatism or sacrifice the whole forty colonies of bees.

Accordingly, bright and early the next morning I visited the nearest hive and found the first bees just venturing out, wiping their eyes so they could see better which hive to rob next. I bared my ankle, and, as my bees are always ready for work of this kind, I reached out and gathered in No. 1. It did its work nobly. Nos. 2 and 3 did likewise. I reached for No. 4 and caught it on the fly. The little fellow, being over-anxious, could not wait till placed in position, but fired away and caught me just under the finger-nail. Now, six or seven being the regular dose for adults, and I being about as adult as I ever would be, decided to try about six. In catching No. 5 I made a little miscalculation, and smashed it so flat that, had it been used, it would have had to be in the form of a poultice. In smashing this one I seemed to have given offense to the whole outfit, each one taking it as a personal insult, and each one insisting on sacrificing his life whether I required it or not.

I have discovered during life that even rheumatism is preferable to some other things; and this being one of them, I retired in good order, or in as good order as a man can with about four quarts of angry bees playing tag round his face. I had decided to take the prescription on the sly, but was caught in the very act; and, during the morning, there were many smiles passed round the family circle at my expense.

I felt no inconvenience from the stinging until about 10 A. M., when I began to realize that something besides rheumatism had moved in. By 11 o'clock I was past navigating. The boys being in a hurry for seed potatoes, I got propped up against a pile of bee-hives and went to cutting potatoes. When my ankle became too painful I would stoop over and rub it to subdue the pain. At noon, with a little help I reached the house and lounge. I took my dinner on the installment plan.

After dinner the family gathered around to see my sore leg. After my ankle was bared to view they stood in silence, viewing the disabled member for a few moments; but instead of that sad and sorrowful expression that I had expected to see creep over the faces of that group I saw nothing but what I took to be suppressed merriment. In the hours of anguish and sorrow I looked for sympathy that I might be able to bear my burden with a lighter heart; but as I gazed into their faces I beheld not that expected sympathy, but in its stead a hidden smile crept over their countenances; and when

they could contain themselves, no longer the red-headed member asked in a serio-comic voice, "Have you been applying mud for the purpose of reducing the swelling?" Just then something dawned upon my darkened mind. With a little help I arose to a sitting posture and got my first view of that ankle since I had given it its medicine early in the morning; and of all the looking legs I ever saw, that one I think was the worst. A freshly polished stove-leg would look pale by the side of it.

I at first thought it had been dead for several weeks, and was unfit for further use; but the family, between loud bursts of laughter, explained away my fears by saying that the potato juice and soil rubbed on while cutting potatoes had given it the high polish. While the good wife removed the many coatings of potato juice and soil, the remainder of the family consoled me with such remarks as these: "His ankle is swelled just awfully;" "It's almost as large as a chair-leg; and unless the swelling goes down his legs won't be mates;" "He will either have to get the other one stung or have it dipped."

Now, Mr. Editor, my legs never were remarkable for their size, and, of course, time, together with the summer heat and wintry winds, has not left them much larger than old-fashioned churn-dashers; but they never refused to do duty when called upon in over fifty years that I have had them in use until the afternoon of the day when I first took a dose of bee-stings for the cure of rheumatism. I occupied the lounge till about 9 P. M., when I was taken with a chill that shook me from center to circumference. My teeth would have chattered like a dilapidated corn-sheller; but time had kindly removed a majority of them; and the remainder, having no connection with each other, passed harmlessly by on the other side. I was put to bed, packed between comforters, and the family took turns drenching me with hot drinks until I felt like a locomotive boiler with steam up ready for a start with a run ahead from Chicago to San Francisco.

The night proved to be one of the longest I ever knew; and long before the morning dawned I expected my wife to be a widow while I would be peacefully resting within the shade of those beautiful trees upon the meadows green where rheumatism and bees had ceased from troubling. The night, like all others, passed away, and my wife was not yet a widow; and, though inwardly groaning from the constant pain that was making life almost unbearable, I really felt thankful that she still had a husband. Though badly battered and time-worn, she is still willing to minister to his wants.

As time wore on, the swelling and pain increased. On the third day the doctor was called upon; but the combination kept right on

doing business at the old stand. Mr. Hart informs us that on the third or fourth day his patient was seen to jump and kick. Now, on the third or fourth day after taking, nothing on earth would have induced me to even kick, unless it would have been to have had the writers of those articles standing right in front of me, facing in the opposite direction; but possibly their articles were all right, only they should have inserted a clause advising old people, invalids, and feeble-minded men not to monkey with the buzz-saw until they found out whether it was in motion or not.

Now, Mr. Editor, this is the twelfth day after taking, without even shaking, and I am still occupying the lounge, most of the time. I owe no one a grudge; and after giving the subject much thought I have decided to throw no mud at the writers of those articles—at least, until after I have written my friend Poppleton to send me their size and disposition.

Spring Green, Wis.

[It is evident that too much of a good thing is not a good thing in your case. Homeopathic doses, in some instances at least, are better than allopathic. Fewer stings might have had a better effect. While your experience is ludicrous, it borders more on the serious than is really pleasant. We shall all hope nothing more serious will develop.—Ed.]

BUCKWHEAT.

SOME VALUABLE SUGGESTIONS IN REGARD TO
RAISING A CROP.

By *Edw. Smith.*

□ I believe that comparatively little is known of its culture and usefulness. While it is a fact that it takes away a great deal of the fertility of the soil on which it is grown, if left to ripen, it is as sound a fact that, if turned under green, it is equal to clover as a fertilizer, only it does not retain its fertility so long. □ I will say, for the benefit of the inexperienced, that a good way to grow it for seed is to plow a piece of stubble ground, pulverize it nicely, and, if very dry, a light rolling may be necessary. □ Buckwheat, like wheat, should be sown in a fine yet somewhat firm soil. It is well to have the ground smooth, as it makes it nice to harvest it. Set the grain-drill to sow one bushel of wheat. Then it will sow about 3 pecks of Japanese buckwheat. This rule, of course, varies with different-sized varieties, and must be judged by the sower; but 3 pecks is about the right amount to sow per acre.

The way I harvest mine, I cut it with a scythe or mower, and gather it up with a four-tined fork into small heaps, say a medium forkful in a heap. I work at it in the morning while the dew is on it, as it sheds off easily when dry. With the sun shining favorably, these heaps will be thoroughly dry by the middle of the afternoon. I then drive up to them

with a wagon having a tight-bottomed bed. Throw in a layer several inches thick, and with the fork beat it until all the seed is off. Then I throw off all the straw I can, and drive on and throw on another layer, and so on, leaving the wheat in the wagon. I then run it through a good fanning-mill, and it is ready for the mill or to sow again.

Any one considering this too slow work can cut it with a self-binder, binding in rather small bundles, and then thrash it with a machine. It is not well to rake it with a hay-rake, as too much seed is lost.

The best time to sow it, if wanted for seed, is the first and second weeks of July, as it then yields the most seed. But if wanted for bee-pasture it is better to sow during the latter part of the month or the first part of August. It will then yield a fair crop of seed, and as much nectar as at any other time, and will not give the bees a swarming craze, as is often the case if sown earlier.

I have learned by experience that buckwheat is one of the best egg-producing foods for hens that can be had. It sells at about 75 cts. per bushel at the custom mill here. The average yield is 20 to 25 bushels per acre, which, considering the short time it occupies the land, makes it a profitable crop to raise, as the same ground can be put in wheat again as soon as the buckwheat is taken off, and it has occupied the ground only while it otherwise would have lain idle. But the ground is a little worse for wear.

It may be sown at any time from May to August, or even September, if it is to be turned under as a fertilizer; but it grows best in the fall. I have heard that it makes good hay if cut and dried like clover; but I have not tried it myself, and therefore will not indorse it.

Carpenter, Ill., July 3.

[I can indorse almost every word of the above, from actual experience. I have only to add that, in our locality, or south of it, I would sow crimson clover at the same time with the buckwheat. From my experience I think the clover does better with the protection given by the buckwheat. As soon as the buckwheat is killed by the frost, or harvested, the clover then very quickly covers the ground. In our locality we have succeeded in getting an excellent crop of grain when the buckwheat was sown as late as the first week in August.—A. I. R.]

EARLY AND LATE REARED QUEENS.

By George L. Vinal.

One often reads in the various bee-journals about the advantages of late-raised queens over those raised earlier in the season. For the last six years I have tried to find out the difference, if any, and what it was, between a queen raised early in the season, one raised in the middle of the season, and one raised as late in the fall as it was safe to expect them to become fecundated (that was October), all from the same

mother, and under the same conditions as regards number of bees in the hive, and feeding, if required; also, as far as possible, with selected drones, and drones from selected queens.

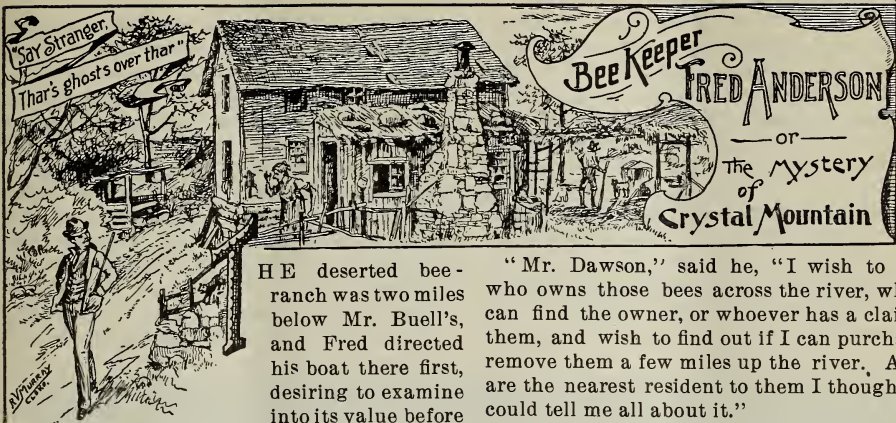
I find that queens raised late in the season are, as a rule, larger in circumference, by measurement with a very finely adjusted pair of calipers; also that they are from $\frac{1}{8}$ to $\frac{1}{4}$ inch longer. They are more fully developed in a general way, the same as a queen that is raised by a colony to supersede the old one. If raised in the fall I find that the next spring they commence to lay earlier, and are more prolific; that, as a rule, their progeny are larger and more industrious; that they are not so apt to swarm; they live from three to four years, and perform their work as queens better. In other words, as a rule they rear more and better brood.

We now might ask, "Why is this so?" If we look at it from a physiological point of view I think our question is answered by a little reflection and thought on the subject; that is, that the queen raised in the early or middle part of the season goes to work at once, and is forced, by the demands made on her, to furnish brood for the full capacity of the hive, for four or five months, and to commence to do it from the time she is ten or twelve days old, thereby impairing her vitality and strength, taxing them to their utmost, while the late-raised queen has a long winter's rest during the corresponding five months, thereby developing into full strength and womanhood before she is required to draw on her vitality to the extent of her earlier-raised sister.

If we look at the queen's oviduct, with a powerful microscope, we see the lining membranes of the early-raised queens are thinner than those raised late in the fall. I think this shows impaired vitality. From my observations I have come to the conclusion that a queen raised in the fall is stronger, and has, through the winter, become more vigorous before being called upon to perform her natural functions to their fullest extent, thereby having time to store up vital force. Having gained strength, and developed to their fullest capacity all of her organs of productiveness before she is called upon to use them, when she does that by the strength gained by her rest and development in early life, she is better prepared to stand the strain that is required of her during the following season; and when that ends she has another long rest to recuperate her vitality before she is called upon to go through another season's work.

Charlton City, Mass., June 15.

If you would like to have any of your friends see a specimen copy of Gleanings, make known the request on a postal, with the address or addresses, and we will, with pleasure, send them.



HE deserted beech ranch was two miles below Mr. Buell's, and Fred directed his boat there first, desiring to examine into its value before

"Mr. Dawson," said he, "I wish to know who owns those bees across the river, where I can find the owner, or whoever has a claim on them, and wish to find out if I can purchase or remove them a few miles up the river. As you are the nearest resident to them I thought you could tell me all about it."

seeing Dawson. He found the things about as described by young Fiske. The pile of hives were scattered as stated; the three colonies of bees, the cabin with a few boards off, the door on the ground, and a few shakes off the roof. The hives could be made serviceable by using a few more nails; and, though the frames were scattered, and many broken, he was fortunate to find a crate of frame material that had never been used. He counted up fifty hives, and found another three colonies of bees in the bushes.

"Wa-a-ll, stranger," drawled Dawson, "yer want ter know a good eel, and yer have enumerated yer ideas so fast, an' run 'em all onter a string tergether, that it's kinder confoosin, to my understandin'."

The woman had halted in her chopping, and had readily taken in the questions, and, in a shrill voice, said, "Why, Dad, you must have a pow'ful understandin' not to grip onter them sentiments. He just wants ter know—"

"Now, Mariar," said Dawson, "you jest look that fish-grindin' mouth of yourn jest whar it stands, open or shet. The Bible says things must be done decently an' in order; an' order is heaven's fust law."

"Ha, ha! that mout be so," said the woman; "but that fust law must hev stepped out or been takin' a nap when yer understandin' was born."

"Thar, now, Mariar, that'll du. The Bible says a woman—"

"Quotin' Bible again," said Mariar. "Mebby you'll make the stranger b'lieve yer a Methody preacher. Say, stranger, hev ye got a bottle of whisky about yerself or boat? If ye hev, jess shake it at Dad an' see how nimble he'll climb down off'm his Bible-quotin'."

"Hokey pokey, Mariar! what's the matter with yer? I say, now, shet up, an' I mean it," said Dawson in a loud and excited tone, and with a menacing step toward the woman. Mariar had evidently been there before, and knew the limits of her sarcasm, and, hastily gathering up a few sticks of wood, retired to the cabin."

"Now, stranger," said Dawson, "jest unlimber yer fust proposition."

Fred, lending himself to the humor of the occasion, said: "Well, sir, I am here."

"That's a fac', sir; sensible; can't be controverted; decently an' in order," said Dawson; "and now, stranger, pull the next off'm the string."

"Where is the man that owns the bee-fixings across the river?" Fred asked.

Mr. McBurger had evidently fitted up the place for a permanent residence; for, sticking up at one side of the cabin, there was an inch water-pipe. This led off through the weeds, evidently some distance up the river or to a spring. Fred traced it into the bushes some hundred feet away, where he found it disjointed.

After his inventory Fred was anxious to see Mr. Dawson, and accordingly navigated his craft across and down the river to that gentleman's abode, which was a full half-mile away. Dawson hailed from Arkansas, on the Mississippi, and naturally gravitated to a river location in California. He evidently belonged to that class that are unfortunately "born tired," and had never desired to cultivate any other trait.

His wife, a lean, angular woman, with an aspect of extreme acidity, was chopping a few sticks of wood toward the rear of the cabin, while the man was mending a fish-net which hung over a frame near by. There was the usual number of urchins and dogs upon the premises. The latter came down to the landing in noisy and menacing attitude, and Fred held his craft off shore until the animals were called away and kicked into silence by one of the boys.

Fred, not wishing to spend much time, after the usual compliments and the assurance that this was Mr. Dawson, proceeded directly to business.

"It's my painful dooty," said Dawson, "to inform you that it is supposin' that he went tu the bottom of the river; and may be is thar yet fur all I know, fur he never was found. Yer see, stranger, them ar bees gether the most of their honey from rattleweed posies, which is plentiful like around hyer; an' whoever eats their honey or gits stung by them gits more or less rattled; an' then, stranger, I don't like ter say it of a dead man, an' a friend; but the owner of them varmints liked Colusa whisky pooty well; and atween rattleweed honey and tanglefoot whisky his mortal remains are somewhar, I'm sposin', in the bottom of the river."

"Then if the owner is dead, who owns the things now?" said Fred.

"Nobody, as I know on; they've been thar now nigh on ter two years, an' nobody has teched them except now and then a fool camper, an' they allers git away quick an' rattled like."

"But I supposed," said Fred, "that, after a man's death in this State, in case he had no relatives or heirs here, the public administrator would take possession and settle up the estate."

"Yaas, that's the law," said Dawson; "but as the body of McBurger was never found, it's only a supposin' that he war drowned. He mout a run away, yer know. Bout a year arter the mystariou disappearance the public administrator hooked on to the affair fur a little recreation like. When he come hyer the fixins looked all stove up, like they'd had a cramp; an' the few bees that war left, as yif bein' aware they war monarchs of all they surveyed, administered on the administrator afore he had a chance to administer on them. He recreated right lively amongst the bushes—a good eel more so than he expected. I heerd he reported at Colusa with his eyes shet, an' that the fixin's war no good, an' his great-gran'mother, or some other remote relative, mout have them afore he would try to administer thar agen."

"Then I understand," said Fred, "that no person has a claim on the property, and the public—"

"Now, hold on, stranger; one thing at a time, decently an' in order," said Dawson. "The only claim I knows on is my claim of \$10. McBurger owed me fur pervisions—bacon, eggs, an' sich."

"There's nothing, then, to prevent my taking those bee fixings up the river and making good use of them?" said Fred.

"No," replied Dawson; "nothin' 'ceptin' that little \$10 'count."

Fred hesitated a moment about paying the money, for he had doubts about the correctness and validity of the account. On the other hand, he reasoned that, if he did pay him and take his receipt, he would have something to show that would in a measure exonerate him if another claimant should appear; furthermore, the things were going to ruin where they were;

and as the success of his plans depended upon his securing the outfit, he said, "Mr. Dawson, I am willing to pay your account upon condition that you sign a receipt for the same;" and Fred pulled out his memorandum-book and proceeded to write a receipt in full with privilege of removal.

"W-a-l-l, stranger," said Dawson, "down in Mizזורi and Arkansas, whar I have lived, we didn't do things that way. A man's word war considered as good as ary writin';" and, turning suddenly to Fred, said he, "Whar you frum, any way?"

"I'm from the State of Maine," Fred replied.

"Ha, ha! thought so," said Dawson. "Yankee!" and he said it in a sarcastic tone not unmingled with a tinge of hatred. "Yankee, on the pickayune order. Yas, Yankee, I'll make my mark on yer little paper;" and Fred noted the malignant gleam in his eyes as he made a cross for signature, without comment. Fred put the proper ornaments around the cross, and, taking out his purse, selected a \$10 gold coin from among several others of larger size and the same color. The same malignant gleam again appeared upon Dawson's face.

Fred was glad to get away. It was well toward evening when he said good-by to Dawson; and as the latter said "good-arternoon," he remarked, "Spouse you'll have ter sleep in the cabin over thar."

"I suppose so," said Fred as he hastened away. As he passed the front of the house the woman suddenly stretched her head out of the little square window and spoke in a sort of stage whisper, "Say, stranger, thar's ghosts over thar—bewarr!"—and her head as suddenly withdrew.

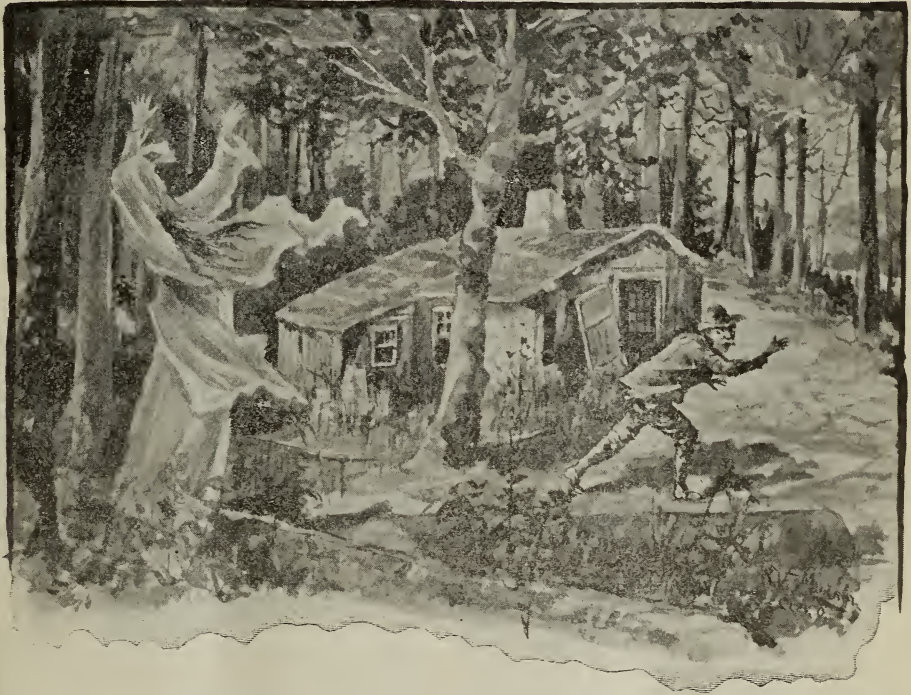
Fred Anderson was not a coward, neither was he afraid of ghosts; but the words and ill-concealed actions of the Dawsons gave him some alarm, and enough food for thought until he had crossed the river. He was convinced that Dawson was a low-down river cut-throat, and he had no doubt that he had evil designs against him that very night; and before landing at the forlorn bee-ranch he had outlined his plan of defense in case Dawson should molest him. As he landed his face brightened, and, laughing aloud, he said, "Ha, ha! he hates the business ways of a Yankee; but I'll play him a Yankee trick he will not soon forget, if he gives me a chance;" then he began to sing, "The night is stormy and dark, my lover is on the sea;" and his thoughts were of the mad but charming Alfaretta.

The sun was just sinking out of sight, leaving tints of crimson and gold over all of the western sky. Darkness would soon settle over land and water, and Fred felt as though every moment wherein he could see to work should be improved; and during the next hour the portable things—empty hives and their frames,

bottom-boards, and covers, were loaded upon the flatboat; and then, as the shadows began to deepen, he shoved the boat off, ran it down stream a few rods, then into a little cove surrounded by those tall tules that grow so luxuriantly upon every slough along the river. Here it was secure from observation; and, tying it fast, he again leaped on shore and made his way through the willows to the deserted apiary. The hives, with their buzzing inhabitants, were then attended to. With the aid of a little smoke from an ignited piece of rotten sycamore wood the bees were driven inside, and a piece of wire cloth tacked closely over the entrance. The cover was then removed, and a square of

and his wife came vividly to mind; and in like manner all of the weird stories he had ever heard came floating unbidden into his imagination. The flapping of some bird in the trees, the splash of some prowling animal in the water, or the hoot of an owl, all had a startling effect; and, though the hours dragged wearily, he was thus kept on the alert for any possible danger.

Toward midnight the skies began to lighten up, as they often do in this western country, and things that were not visible an hour previous could now be dimly seen at some distance. Fred had kept his post well under the trees and near the river; and, though he was expecting



"The night is stormy and dark, my lover is on the sea;
Let me to the night winds hark, and hear what they say to me."

gunny sacking nailed in its place. The porous cloth would give ample ventilation, and still prevent the bees from escaping. The six hives were thus prepared for removal. It was then too dark for further work, and Fred bethought himself of his lunch-basket, with an appetite sharpened by his long afternoon's labor on the boat and on shore. He refreshed himself upon bread, beans, and canned meat from the Ghering ranch, and milk and a few nicknacks given him by his friends the Buells.

Fred's work in preparing his bee-keeping outfit for removal had kept his thoughts of danger in abeyance; but now with nothing to do but to sit still in the gathering darkness, and think, every motion and word of Dawson

Dawson, still he hoped that his suspicions against the man were groundless. Thus expecting and not expecting, his heart gave a great throb as a boat with one occupant came silently floating down the river with the current. A silent movement with the one oar sent the boat as quietly to the shore. The slouch hat and slouchy form, dimly seen, revealed the man Dawson. Fred quietly stole away past the cabin and alongside the old water-pipe. Dawson evidently supposed that Fred was asleep in the cabin. The absence of the flatboat apparently disconcerted him, for he peered into the darkness up and down the river-bank; but he soon turned his attention toward the cabin, and stealthily approached it. He silent-

ly entered, and, finding nothing but weeds and rubbish, came out and walked slowly around it. Discovering no one within or without, he lost his caution and sat down upon an old tree-stump a few feet in front of the cabin, and vented his anger and disappointment in words.

"That Mariar said suthin' to the spindlin' Yankee about ghosts that's jes scared him outen his boots and the kentry; ef she'd jes kept that ar clapper tongue of hern quiet—but it's talk and gabble, like all onreasonin' wimmen. Now the Yankee has got away with that receipt on that money. He had a hunderd dollars or I'm no jedge of yaller metal. I could a settled his Yankee hash afore this time; an' with a piece of railroad iron he'd made a good mate fur McBurger off Lone Tree Point."

"Lone Tree Point" came like a startling echo in a loud whisper from the cabin. Dawson sprang to his feet with evident alarm. "What in Heaven's name is that? Somebody's in the cabin."

Again he entered it, and, with trembling fingers, lighted a match. This revealed vacancy, and he came out and passed around the building again, examining closely. Dawson was at heart really a coward; and though he scouted the idea of there being ghosts, and was bold to commit evil deeds under the cover of night, it needed but a spark of the apparently supernatural to arouse all the superstition there was in his ignorant mind. As he halted again near the corner of the cabin he said in a perplexed tone, "Durn me if that isn't str—"

"Jeem Dawson," said the whisper, in a broad Scotch accent, almost in his ear.

He sprang away from the cabin, and said, in a suppressed and terrified voice, "Donald McBurger."

"Aye, Jeem Dawson," said the whisper; "weel ye ken Donald McBurger. Me bones rist beneath the waters off Lone Tree Point; but, Jeem Dawson, me speerit follows on yer footsteps. Yer days o' evil deeds draw nigh to an eend." Then in an intense whisper, "Jeem Dawson, frae this hour ye are doomed, doomed, doomed."

The now thoroughly frightened man turned to flee; but a new terror seized him; for, upon the very stump where he had been sitting and plotting, there stood a figure in white. It looked colossal and headless in the darkness, and, pointing toward the river, it uttered such a blood-curdling shriek that Dawson gave an answering yell and fled toward his boat as though all the minions of darkness were behind him. The white figure seemed to float through the air, following him and uttering another shriek. Dawson threw himself into his boat, his voice venting itself in a half-audible, animal whine, and the quick rattling of the oarlocks of his boat gave evidence of his desperate efforts to get away.

Upon the apparition of the white figure on the stump, Fred Anderson was nearly as much startled as Dawson. Fred was playing upon Dawson's superstition by having a ghostly talk to him through the old water-pipe. When the figure arose so suddenly and gave such a shriek, his knees knocked together, and his hair nearly elevated his hat, and he would have run in the opposite direction as fast as did Dawson toward the river, but he was spellbound. He saw the figure apparently float after Dawson, and then it disappeared on the river-bank; and, after some moments of wondering in perplexity what he should do, he heard a voice. It sang:

The night is stormy and dark,
My lover is on the sea;
Let me to the night winds hark,
And hear what they say to me.

Fred sprang forward, and almost shouted, "Why, Alfaretta Buell! are *you* here? Is this your very self?" and he grasped her by the arm.

SUPPLYING THE HOME MARKET.

CALLING UPON OLD CUSTOMERS; SELLING
FIRST AND SECOND GRADES FOR JUST
WHAT THEY ARE.

By F. A. Snell.

In about five weeks after my first visit is made to town No. 1 I again take a trip to the same place, with a supply of honey. On arrival I first call at the grocery where I left my honey to be sold on commission. The grocer informs me that he has sold quite a large part of my honey, and would like to have a new supply. This time he is ready to buy, and I sell him quite a lot of the comb and also some of the extracted. After this time I sold him hundreds of pounds each year so long as he remained in the business, and, later, to his successor.

The others with whom I dealt on my first trip were next seen, and found ready for a new supply. When room would permit, and a number of cases of honey were taken, I would place the cases three or four deep, the smaller at the top, which we all know presents a very neat view of the honey-combs through the glass in the side of the case. One case was set to one side, from which to retail.

The grocers have, without exception, been pleased with my arrangement of the honey when so placed. Pails or cans are also placed where they may attract attention, the label being always placed in full view of those entering the stores.

I have found it very useful to give each grocer some hints as to where the honey should be kept during cool weather in fall and winter, so that it may not deteriorate. I have found that, nine times out of ten, if I say nothing about the matter, the honey will be put in the coldest part of the store, or in a back room, except the one

case from which to retail; and in one case the larger part of the purchase was put into a damp cellar, and nearly ruined. The same I have found to be true in selling to private parties.

The bee-keeper must do a great deal of talking along this line of instruction. To old customers I do not now have much of this to do; but with new ones it seems as necessary as ever.

Right here is a very important point for all bee-keepers to consider. As good honey as can be produced may be nearly ruined by unwise handling; and when such deteriorated honey is consumed it disgusts the consumer, nearly ruins future sales, and, where hundreds of pounds could have been sold, only tens are disposed of.

After supplying with the honey all the dealers named, and a few minutes spent in pleasant conversation, I take my leave, with the understanding that I will supply them so long as my stock of honey lasts; or, if no more is on hand, to call on them the next season if a crop is secured. And so I have aimed to keep my trade in all these towns by keeping them supplied when I have had any honey to sell, always aiming to make our deal as pleasant for my patrons as for myself. The honey should be well ripened, kept later in a hot dry honey-room, put up for sale in the neatest way possible, and each package labeled with the name of the producer, etc., and sold for just what it is. If the honey is No. 1, sell it as such; if not, or only No. 2, use no deception, but deal honestly. In complying with the above, trade once gained will be held, and a clear conscience also.

Milledgeville, Ill.

[I want to put a good big emphasis on your last two sentences especially. Selling second grades for first may put a few extra pennies in the pocket for the first deal but it kills future trade.—Ed.]

ANOTHER BEE-ESCAPE.

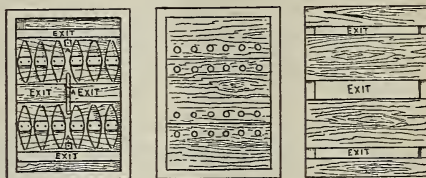
IS IT TRUE THAT EXTRA EXITS FACILITATE THE ESCAPE OF THE BEES FROM THE SUPER?

By W. J. Reddish.

I notice in GLEANINGS for June 1, in the advertisement of James Pearson, the assertion that 6 times 1 are 6, which fact I can not dispute. Now, I say 4 times 6 are 24; hence the new Reddish bee-escape is as good as four Jardine escapes. I inclose three views of my escape—top, bottom, and interior. I made this one last winter. It is 14x20 inches, and just covers the top of the Dovetailed hive. It is 1½ in. thick. I have tested it twice. The first time I placed it on a two-story hive. It was a good strong colony, with about half of the bees above. In less than two hours there was only one bee above; the second time, in one hour and a half, less than six bees were above. This escape is reversible, and will send the bees down or up, as you like, which I think the new Jar-

dine would not do; for, if put on one way, the doors would hang open.

Had I known how successfully this escape was going to work I would have made one and sent it to you. I inclose a sample of the spring used for inside construction. The view show-



REDDISH'S BEE-ESCAPE.

ing 24 holes is the top. The holes are ¾ inch; the material is ⅝ in. thick, with strips ⅝ x ¼ in., tacked around to form a bee-space. The interior view shows the construction of that part. The two end blocks and center strip (marked A) are rests to keep the top from settling on the springs. This part is made of four strips ⅝ x ⅝. The side ones are 20 inches long; the end ones are 14 inches long; the corners are halved together, making a frame 14x20. This frame I made out of the lumber of an old trunk. The bottom is screwed to this frame, and then the blocks with the springs tacked to them are screwed to the bottom-board. The dark shading of the interior view shows the exit. The end ones are 1 in. wide and 12¼ long. The center one is 2 inches wide, and the same length as the ends.

The bottom view shows only the exits, which view is not necessary, as you have it in the one showing the interior.

The principle upon which my escape works is the same as that used in a fly-trap that I made about ten years ago, that let the flies in and they stayed in. This trap lets the bee out and it stays out.

Dallas City, Pa.

[I have before stated that the Porters claim that increasing the number of exits does not facilitate the escape of bees; but in view of the fact that two or three of our friends seem to insist that it does, I wish to ask for reports. It takes usually anywhere from 10 to 24 hours to get bees out of the supers by the ordinary Porter escape with one exit. Now, suppose some of our comb-honey friends put two or three of these escapes (Porter's) in one board, and then watch results closely, inspecting the super every few hours. I am rather of the opinion that the Porters have possibly made a mistake in deciding that extra exits do not help the matter. In the case of the Reddish escape above, or a board having an equal number of Porter escapes, I am also of the opinion that, if smoke were used, the bees could be forced nearly out of the super inside of two or three minutes. This would be especially true of black bees and hybrids. Such quick work would be a great convenience at out-yards.

We will try to test the matter here, and hope our friends will let us know, including the Porters themselves.

Their escape itself *could* be made with a double exit, without materially increasing the expense, and I feel quite sure they would be willing to make them so, if they were fully decided in their own minds that such a change would be an advantage.

Perhaps it might be well to state that Mr. Reddish's escape is based on the principle of the Porter, and would, therefore, be an infringement; but I feel very sure the Porters would not make any objection to a few being tried, provided they were not offered for sale, nor made in any considerable numbers for private use.—ED.]



BEE-PARALYSIS.

Question.—I fear my bees have what is known as "bee-paralysis." At one hive the bees seem to be swollen up, many of them, and have a shaking motion, and the well bees are dragging off those the nearest to lifeless, while the dead are quite thickly strewn about the hive-entrance. On opening the hive I find many of these bloated, shaking bees near the ends of the frames, in and about the rabbets of the hive, and in out-of-the-way places. The queen seems to be very prolific; but these trembling, dying bees seem to take the disorder rather faster than young bees emerge from the cells; hence, instead of gaining in numbers, as are my other colonies, this colony is dwindling. What is the cause of this trouble, and what can I do to help them? Does the trouble come from the queen, and will a change of queens cure it? □ The queen is a daughter of one I purchased a year ago, but the bees from the mother and those from sisters are all right so far. □

□ *Answer.*—I think from the description given that there is no doubt that our questioner's bees have what is now called "bee-paralysis," but what was formerly known as "the nameless bee-disease." □ This disease was not known, nor any attention called to it, at least previous to the eighties, if I am correct; but since its first appearance it has made rapid strides, so that to-day there are few apiarists who have not seen something of it, either in their own apiary or that of some other person. What the outcome is going to be, no one can at present tell; but so far the disease seems to be gaining ground, in the United States at least.

In the question, "What is the cause of this trouble?" we have the *great* question; for if we fully understood the cause, the remedy would soon be found; but so far, unless I have been remiss in my studies, no one is sure that he knows what is the cause. Guesses many have been made; but as the years roll by it soon becomes apparent that said guesses did not hold good, and I doubt our having any

thing reliable as to the cause of this plague to the bees and the bee-fraternity. There being nothing at all certain about the cause, to answer the question "What can I do to help them?" would be little more than guesswork also. When the disease first made its appearance, a few of the knowing ones told us the whole trouble came from not letting the bees have access to all of the salt they wanted; so it was said that, if a strong brine were made, as strong as that made for pickling meat, and this brine poured or sprayed over the bees and combs, it was a certain cure, as those recommending said cure had tried it, and were sure it was a *positive* remedy. But when this positive remedy was tried by bee-keepers in general, it soon became apparent that it was of no use as a general remedy. Then salicylic acid and carbolic acid were recommended, not only as a cure for the disease, but as a preventive as well; but when the general public came to use them, and apiarists, whose knowledge was the practical side of bee culture, the verdict rendered has been, "With no effect." Thus, so far as I know, "what can I do to help them?" remains an unanswered problem.

Next we have, "Does the trouble come from the queen, and will a change of queens cure it?" In reply to this I must say as I did of the other remedies, that there were those, years ago, who told us the whole trouble came through the queen, and that, if the queen was killed and another given in her place, then, as soon as the bees hatched from the new queen, the disease would begin to grow less and less; and when all of the bees from the original queen had died the colony would be free from the disease. This statement took hold of bee-keepers to a greater extent than any of the others, and hundreds have tried a change of queens, only to find that it had no effect whatever.

Last year the alarm over the rapid strides of the disease in the South became so great that the editor of GLEANINGS thought it best to pledge all queen-breeders to certain stringent rules regarding destroying all colonies found having the disease, etc., and nearly all of the queen-raisers of this country subscribed to the same. When these rules were published I knew that I had a colony showing signs of the disease; and as I wished to conduct some experiments with the same I did not subscribe to the conditions, and I presume it was wondered at by some that Doolittle's name did not appear with the rest. Without going into minute details, I will say that this colony proved to be the worst of any thing I ever saw (I having had two cases of the kind some years ago, as reported through the bee-papers); and when fall came there were perhaps five hundred shaking bees remaining in the hive, with a little brood in one comb, as a result from one of the most

populous colonies I ever saw in early May. During June, July, and August the ground in front of that colony was literally strewn with dead and dying bees, and several bee-keepers who came to visit me said they never saw any thing equal it in all their experience. The other colonies all remained healthy, which proved that the disease is not a contagious one, by way of spreading to hives in the immediate neighborhood of the diseased colony. When I saw that the colony could hold out no longer I took the queen and gave her to a good colony, so I could be sure she might come through the winter all right, which she did. Did that colony have the disease this season? No; but, on the contrary, it was almost the first one in the apiary to send out a rousing swarm, and to-day both swarm and parent colony are doing "land office" work at storing honey in the surplus apartment.

All my experience has been in keeping with what I find in the last *Review*, from the pen of F. L. Thompson, where he says, "Several sales of bees and queens have been made, the parties buying having full knowledge of the circumstances. In no case did the disease break out among those bees, or from those queens, in their new localities. In one instance, queens were taken from diseased colonies, before the honey-flow had begun, and put in healthy colonies in their new location without any contagion resulting."

Thus it will be seen that the efforts on the part of GLEANINGS toward queen-breeders was a mistaken one. This I think I have proven conclusively; but to add a little more proof, I will say that, on the old stand of last year's diseased colony, was set, the middle of April, when I removed the bees from the cellar, a colony having a queen purchased last July of one of the parties who subscribed to the rules of GLEANINGS. This colony showed no signs of any disease last year; but to-day it is in a much worse state than was the colony on that stand a year ago—bees by the hundred being out in front, dead and dying every day, with bloated abdomens and shaking steps. This, with what Bro. Thompson says, points toward *location* as the cause, and I might indorse this as correct were it not that, in my former experience, after two years, and the death of a colony on the same stand each year, nothing more was seen of the disease till the sudden breaking-out of the disease in an entirely different part of the apiary, last year. I am positive that the queen has nothing to do with the matter, and that all of the remedies spoken of above are of no avail; but further I am not positive. Who will tell us more about it?

[The evidence secured a year or so ago seemed to show that bee-paralysis is communicated sometimes by the queen, sometimes by the combs and hives, and sometimes by the surroundings. One case in which disease follows

the introduction of a queen from a diseased colony is worth a *dozen* other cases in which no disease follows the introduction of such queens, in the way of proof. Those who have asserted that bee-paralysis follows from the introduction of a queen from a diseased colony may have been mistaken; but among them there is Mr. T. S. Ford, who has had a larger experience with the malady than any other man in the United States, and he is equally positive that the queen has a good deal to do with the matter. In any case, as long as there is an uncertainty—that is, a disagreement among authorities, it is safer—far safer—to regard the disease as one which can be transmitted through the queen. We may drive a hundred times along the side of a precipice, without harm; but as long as there is a safe road away from the precipice, it is better to take that road. It seems to me, until we know more about bee-paralysis, its cause and cure (and in my opinion we know very little about it, except that it is spreading over the United States), it would be a sad mistake for queen-breeders to ship queens from colonies having bee-paralysis, or even keep such diseased colonies in the yard.

I agree with you, that we know of no cure. But I do not quite agree that all of the remedies spoken of were of no avail. I think the most we can say is, we do not know positively, although the presumption is that they are of no avail.

It is too bad that we do not know more about this disease. We are pretty well acquainted with *Bacillus alvei* as found in foul brood; but whether the microbe of bee-paralysis is *Bacillus* or something else, does not seem to be settled, although Cheshire calls it *Bacillus Gaytoni*. I know of no living microscopist or scientist who is more competent to give us information on these subjects on which we are so much in the dark than Mr. Thos. Wm. Cowan, editor of the *British Bee Journal*. He probably has the finest and most expensive microscope and accessories of any bee-keeper in the world. Perhaps Mr. Cowan can help us.—ED.]



C. V., Wis.—Authorities do not agree as to whether or not queen-excluders diminish the amount of honey. Very many use the zinc, and claim it makes no difference. When the zinc is not used, sometimes queens go into the supers.

M. S., Pa.—In relation to your bees swarming so repeatedly, and your not being able to stop them, I would say that the trouble may be owing to the cramped quarters in which you put them; or it is possible you hived them on empty frames without foundation; or if on such frames, in a hive exposed to the direct rays of the sun, without shade-board or other shade. Lack of shade, too small an entrance, no foundation, the absence of brood (particularly unsealed brood, which you could get from another colony), all tend to make swarming more frequent. But sometimes a colony *will* swarm anyhow. It gets the fever so badly that it is almost impossible to stop them from leaving

every time they are hived. When bees get to acting in this way I would make them entirely queenless. This will make them stay at home even if every thing else fails. After they get the combs drawn out, and get to work and settle down, and the swarming season is over, introduce to them another queen.



At last pure Cyprian queens are to be had. See Mrs. Atchley's card in the advertising columns.

PARTICULARS and program regarding the next North American, to be held at Lincoln, Neb., will be found on page 547.

THE Mystery of Crystal Mountain is not altogether explained yet. The chapter in this number is thrilling with interest, and the subsequent chapters are not less so, so far as I have read them.

I STILL use the bicycle in going to and from our out-yards. With the exception of one two-horse wagonload I have been able so far to carry down tools and a few minor sundries on the wheel; and in some cases I have gone so far as to carry on my back, pack-peddler fashion, supers of sections containing full sheets of foundation when it would happen that there would be a colony or two that just *had* to have more room before the next wagonload; and the only way to give it was to strap the supers on my back.

THE DOOLITTLE METHOD OF CLIPPING QUEENS' WINGS.

I HAVE just been trying this method, and find it works to perfection. At our out-yard I found that one swarm had left, and I determined to clip the queens' wings of all colonies that were liable to swarm. To go clear home and get a pair of scissors would have taken too much time; so I determined upon the Doolittle plan. I pulled out my knife, opened it, and stuck it into the hive-cover, so as to have it handy. I found my queen, and picked her up by the wings, with the right hand. With the left, I grasped the queen by the thorax, between thumb and forefinger, and released the hold upon the wings. Then, with the right hand free, I carefully shoved the small blade of the knife under one of the pair of wings. The thumb of the right hand was then placed upon the blade edge, just over the wings. A slight drawing motion of the knife over the pair of wings against the thumb severed them, and her majesty quietly dropped between the combs, an inch below, and disappeared. This I did

with several queens, and a pair of scissors is nowhere to be compared with it.

I have never tried Davenport's queen-clipping device, although I am satisfied it would work. But the special convenience of the Doolittle method is that every one has a pocket-knife; and whenever he comes to a hive where a queen's wing is not clipped, all he has to do is to whip out his knife and clip wings then and there before she gets out of sight.

It should be stated that the knife should have at least a moderately keen edge, although a very dull edge can be used by varying the method somewhat. Hold the queen by the thorax, between the forefinger and thumb of the left hand. Place her gently on her back on the hive-cover, and then with your dull-pointed knife cut through the wings into the cover. This is no theory, for I have tried it with the dull blade I had, because I assumed that there would be *some*, at least, who would have a dull knife, and would, perhaps, like to know how to use such an implement; but the sharp blade against the thumb is very much better.

THE VALUE OF DRAWN COMBS FOR THE PRODUCTION OF SURPLUS HONEY.

I AM becoming more and more convinced of the great value of drawn combs. Supers containing sections with full sheets of foundation do very well; but it is plainly evident that those supers containing drawn combs are entered more quickly, and filled with honey, and capped over. My attention was especially called to this by noting how much more readily the bees would fill and cap over supers containing half-depth drawn combs for extracting. In the case of colonies of equal strength, the extracting-combs will be filled and capped over before the bees have begun to draw out a full sheet of foundation in the comb-honey supers—at least, that is our experience. For experiment, where some of the colonies were holding off and didn't seem to draw out the starters, I put on a super containing drawn combs, and, presto! the bees went into them immediately, and in a few days they were filled with honey and capped over.

DRAWN COMBS FOR CONTROLLING SWARMING.

I feel hopeful—yes, almost confident—that we can, to a very great extent, at least, control swarming, even in the production of comb honey, providing that the drawn combs are used in the sections. So far, at least at our out-yard, we have had no swarms that have had plenty of drawn comb. But we have plenty of swarming from colonies having supers on them of foundation not yet even touched.

You see, the point is right here: Such a colony—that is, one having a super containing full sheets of foundation on top, and which the bees have not yet touched, is, in one sense of the word, a colony cramped for room—that is, it

takes *pressure* to get the bees once started to drawing out the foundation. The brood-nest must be literally crammed full of honey; and even then this condition may exist for several days, and the probabilities are that queen-cells will be started, and that the bees will begin to loaf and make ready to swarm; and by the time sections are beginning to be drawn out a little, these same loafing bees have got into the habit of loafing, and the consequence is that the colony does not begin to do what it might have done had it had drawn combs. In the production of comb honey under our present method, it takes *pressure* to force the bees out of the brood-nest into the sections.

It takes a great deal of their strength and honey, and the *pressure* must be great enough to excite swarming before they will actually commence. In a wild state, except in the case of swarms, bees have to build comparatively little new comb every year; and as soon as honey comes they simply store it away in space already provided. Now, is it not true that, in the production of *comb* honey, we are asking the bees to do very much more than Nature asks them to do in their natural environments?

The Dadants run for extracted honey, and, of course, give the bees combs already drawn. It is well known that they have little or no swarming. While their large hives in a measure check natural increase, I believe that the drawn combs, empty and all ready for the incoming surplus, have more to do with it.

"But," you say, "how are we going to have drawn combs in sections?" Well, I would save all that are unfinished, and level them down by the B. Taylor method. But then, you urge, those unfinished sections left over would not begin to be enough. Perhaps not. Well, what then? I believe that, in the near future, from present indications, a foundation will be made having cell-walls and bases, natural thickness, the walls being $\frac{3}{8}$, $\frac{1}{2}$ inch, or deeper. But for the present I will not say any thing more.

Later.—After writing the foregoing on the value of drawn combs I find the following in the *American Bee-keeper*, just at hand, from the pen of G. M. Doolittle:

Some have the idea that foundation is preferable to frames full of comb. This I think a mistaken idea, for the bees must consume some time in getting the foundation worked out to full combs, to say nothing of the expense of buying it, or the work of putting it into the frames. Foundation is good in its place, and I use very much of it, but I have it all fitted in frames, and drawn into combs by the bees, or have frames filled with nice worker combs by the bees building the same. I can not see any sense in melting it up, or allowing the moth to consume it.

Mr. Doolittle expresses what hundreds of other practical bee-keepers believe. If drawn combs are valuable in *extracted* honey, why may they not be equally valuable in the production of *comb* honey? But, of course, such

combs should be thin and as perfect as natural combs.

SWEET CLOVER HONEY AT THE HOME OF THE HONEY-BEES.

A SUBSCRIBER reading what I wrote editorially in our last issue, on page 502, where I expressed the hope that sweet clover would take the place of white, which has apparently run out, has written a protest against GLEANINGS' saying so much in favor of what he calls a "noxious weed;" and he further intimates that, unless we quit talking about it, he will stop GLEANINGS. In that case I do not see but he will have to stop his journal, and, for that matter, *all* bee-publications. They all recognize that sweet clover is one of the best honey-plants in the world, and they insist, on good authority, that it is not a noxious weed—that it is easily killed out on cultivated lands, and seeks only railroad embankments, roadsides, and other waste places, where nothing else will grow. So far from being a noxious weed, it is now being cut and used as hay. While it is not equal to alfalfa, its near relative, as a forage-plant for stock, it comes the next thing to it. It is true, one experiment station has condemned it as a weed; but it is being recognized, and is now recognized by some of the best authorities in the world outside of beedom, as a forage-plant both for bees and for stock. It is true, our domestic animals have to learn to like it; but when they once acquire a taste for it they will nibble it in preference to any other plant; hence it can never be called a weed in pasture lands.

For the first time in our experience we are getting what I firmly believe is sweet-clover in sections and extracting-supers. Our bees are just fairly swarming on this plant along our railroad cuts and roadsides. They are bringing honey in slowly from *somewhere*, and we can not find that they are working on any thing but this clover. White clover has been a practical failure, as usual. Basswood promised well, and made a good spurt, but dropped off rather more suddenly than we thought it would. While the sweet clover is perhaps past its height, it will probably be in bloom in our locality for at least two or three weeks, and possibly a month yet.

I notice one thing—that, after every rain, the honey-flow is increased; and when it becomes a little dry the bees work the best only nights and mornings.

Sweet clover is surely spreading all over the country, and I think GLEANINGS and all bee-keepers may be pardoned for speaking a little in its favor, especially since it does not, except in a few isolated localities, occupy cultivated lands; and as it grows where nothing else will grow except ragweed, it adds just so much to the wealth of the country. I, for one, can not *help* shouting for sweet clover.

OUR HOMES.

Except ye repent, ye shall all likewise perish.—
LUKE 13:3.

If our readers will turn to page 866, GLEANINGS for Nov. 15, 1895, they will find there a sort of introduction to evangelist Rev. A. T. Reed. Well, a few days ago different members of the family were discussing as to the way they should pass the Fourth of July. When the question came to myself I said I had not fully decided. I had rather calculated on a wheel-ride somewhere, but had not decided just where it should be. It was that same day, or shortly after, that a letter was put into my hands, containing the following:

Dear Bro. Root:—We are to have an all-day meeting July 4th. Mr. Chafer, my old singer, and his wife, are to be here from Painesville, and neighboring ministers are to help. It is to be a basket picnic, with two hours' intermission for visiting the Ledge, etc. This is the third year in which we have held these Fourth-of-July meetings. I have found that it works well.
A. T. REED.

Thompson, O., June 30.

□ I found, by looking at the map, that Thompson was toward the northeast corner of the State of Ohio, and not a great way from Painesville. I had long wished for an opportunity of visiting Storrs & Harrison's great establishment, with their 1000 acres of land and 29 greenhouses, as we read about in the advertisement which for some years has found a place in GLEANINGS.

The idea of holding a religious meeting on the Fourth of July was something novel; and an all-day meeting conducted by an evangelist was something I had never heard of before. I informed Bro. Reed that I would try to be on hand at that meeting on the Fourth. Early in the afternoon of the 3d I reached Painesville. An account of my visit there will be found in my Notes of Travel. Nobody knew exactly how far away Thompson was from the Storrs & Harrison farm. One man said he guessed it was about four miles. Another said he guessed it was nearer twice that. When I passed people on the road there seemed to be quite a general disagreement in regard to the matter, from which I inferred that Thompson must be an inland town of not very great importance. By the way, it is a little singular how little many people know about things or places within ten miles of the place where they were born and brought up. Perhaps the advent of the wheel will work a reform in this matter. Any way, it seems to me any real live person in this age and day of the world should know something about distances to surrounding towns in the neighborhood. I think it is about 13½ miles from Painesville to Thompson. The consequence was, as I did not make my calculations for so great a distance, it was getting dusk when my wheel and I rustled over the beautiful roads, and paths paved with white gravel, of the little town of Thompson. As I had had no supper I quickly repaired to the only hotel in the place, and told the good woman presiding that I should like a beefsteak if it would not make too much trouble. She said it would take a little more time, and I thought I would hunt up Bro. Reed meanwhile. I gathered from the singing that the meeting had opened, even though it was early; and, looking in, I saw Bro. Reed presiding down in front of the pulpit. As soon as the hymn was finished he called the congregation, that were scattered almost all over the church, to please come forward and occupy the seats near the speaker. How many times I had seen him do

this! and he always gets them to come—even the bashful boys and girls that slip in near the door. I sat down by the door this time so as to slip out unobserved and get my beefsteak. But I could not well slip out after such a call from my old pastor; neither could I very well sit still in response to his urgent request; so I found myself up very near the speaker. A wheelman who has made 13½ miles after his usual supper-time generally needs his nourishment; but the old familiar words of my dear friend of years ago proved stronger than nature's demands for supper. It was not very long a question as to whether it should be spiritual food or bodily refreshment. It seems to me as I write, that that brief sermon would do the readers more good than any thing I could write; but there is no room for it, even if I could give it in his words. When I was called upon to speak I told the friends that I had come thus far from home for the sake of worshipping with people who felt it the proper and right thing to continue the meetings right along through the Fourth of July.

It is not very long since I was looking back to my boyhood days, and thinking especially about the Fourths of July. What a thrill they used to give me! How I used to enjoy every hour, from the rising of the sun till its going down! I wondered if I should pass a Fourth of July like that again. Let me tell you that I have passed just such a one.

I was up early in the morning, and visited a celebrated spring before time for meeting. My account of this also will be found in my Notes of Travel. The day was rainy; but I got back from my visit to the spring just before the rain, and had time for my forenoon nap before the meeting opened. In my own home I a great many times awaken from my sleep with the music of the piano in my ears, accompanying the voices of my daughters. This time I was awakened also by the voices of singers. Before I quite came to consciousness I tried to comprehend how it was that such entrancing music should come to my ears on that morning of the Fourth of July. It was a band of singers from Painesville, led by a Mr. Chafer, referred to in Bro. Reed's letter. It was a new gospel hymn I had never heard. They sang while they drove several times around the square in the center of the little town, even though it did rain. The singers were pretty well protected by umbrellas and wraps, and carried out the program of the day grandly in spite of the wetness. I heard the same hymn several times during their stay, and its melody has been ringing in my ears every now and then during the past week.

There was a meeting in the forenoon, one in the afternoon, and one in the evening. I wondered how Bro. Reed got such good audiences in such an out-of-the-way country place, and on the Fourth of July too. Several people explained it by saying the young people were all anxious to "go somewhere," because it was the Fourth, and therefore they came to meeting. I suspect, however, that another explanation is that Bro. Reed has been for a whole week visiting their homes, not only through the town, but quite a piece out in the country. And this is one of the secrets of his always having good audiences, no matter where his field may be. This reminds me of a single sentence in his letter, that I will give right here:

□ My fields of labor in the summer are weak churches that can give but little financial support.

□ Personal work, you see, is what reaches people in temporal matters, and personal work is the thing that saves souls in spiritual matters. Bro. Reed often visits people at their homes,

and becomes acquainted; then when they come to hear his gospel message in the evening he gets acquainted more, and in this way he has no lack of audiences, even through the busy time of harvesting and haying. His sermons, every one of them, are soul-stirring and to the point. I can not give them all here, but I am going to use a few of his illustrations. The one that impressed me, perhaps, most of all, was the one from the text given at the head of this talk.

I shall not attempt to give the discourse as Bro. Reed gave it; in fact, I am going to give you only some of my own ideas suggested by listening to that and other sermons on the Fourth of July and the Sunday following.

Jesus told us we shall all perish unless we repent. We can not stop now to consider the circumstances under which these words were spoken, but only the point included in the text. We all need penitence. This implies that we are all sinners. The speaker said he talked with people not only all through that town, but in other places where they had preached. Some would say, "I believe in the existence of a God; but I do not believe in such a God as you do. I do not believe that God would send us into the world, and then deliberately torment and curse us."

Mr. Reed replied, "My friend, let us take it on your own ground. You do believe in an overruling power and a Creator. Well, have you so far in life treated that Creator, the God in which you believe, with all the respect that is justly due him? Have you so far in life done this?"

He told the audience that he had never met more than one man who could boldly claim he had given even the God of his belief the respect and consideration that such a being should have from a creature of his. Then the proper thing for us all to do is to repent of our misdeeds and shortcomings toward the Creator we all acknowledge. We are guilty of sins of omission as well as sins of commission; and whoever has tried to live a pure and upright life before God has, sooner or later, become conscious of the impulses and feelings that are continually swaying us more or less from the straight and narrow path. We need penitence and forgiveness. A man's life may be in harmony with God, even though he be guilty of sinful thoughts and acts that are common to weak humanity. Mind you, I do not mean to excuse by this remark any one for being guilty of sinfulness. There are two ways of living. One way is in harmony with God and his laws. The other way is out of harmony with God. The first brings peace, happiness, joyousness, and life is a great and precious gift for which we can thank the Almighty day by day and hour by hour. The Psalmist has it correctly in his expression, "But his delight is in the law of the Lord, and in his law doth he meditate day and night." If a man is out of harmony with God and his holy laws, he is unhappy, dissatisfied with everybody and every thing, and his life finally comes to a rebellion. Unless he repents, and turns from his evil ways, he is a lost soul. "The man who deliberately and calmly takes God's name in vain is a *lost soul*." When the speaker uttered these words with his terrible vehemence and eloquent oratory, it almost made me tremble to think of it. Then he went on to say that, right in that beautiful town of Thompson (I think it was during some of their religious meetings right on the square), a man's voice was heard in cursing and blaspheming, so plainly as to be heard clear across the town. One who permits himself to indulge in such language is in defiance of God Almighty. As a rule he will go on and on. Satan never lets up

when he gets a hold on a human being. The speaker then told of men whom he had met and talked with, who openly *defied* God, who challenged him to curse them with a thunderbolt, if there was a God who ruled over all, and who cared any thing about these things. In one of our cities there was an intemperate man who was in the habit of boasting, whenever he could get anybody to listen to him, that he was not afraid of God. He even dared and defied his Maker to show his power. Along with his terribly sinful life he had a habit of getting on the railroad track when he was intoxicated, and his friends had to watch him and get him away. One night, in one of his drunken orgies, he got on the track just before a swiftly passing locomotive. He was seen to shake his fist at the fiery monster, and to say, in a loud boasting voice, "Who is afraid of a locomotive? who is going to be scared by a red light? Come on, and crush me, if you dare. I am not a child, and I will give you to understand that I am not afraid of any thing or anybody." These were his last words. Before his friends could reach the spot he was crushed to death between the terrible wheels of iron and tracks of steel. While the blasphemer does not always meet his fate so quickly, it is none the less sure.

At the supper-table at the hotel, some one used an oath. It was used carelessly, and he perhaps did not know that he had linked the word in, as he spoke rapidly. Some of us remonstrated. He gave as an excuse—or somebody did, I do not exactly remember—that *doctors* always swear. This brought forth another remonstrance, and somebody present asked a young doctor who sat at my elbow if he ever swore. I think the question was asked innocently; but it seems that, innocent as it was, it was cutting pretty close to home. I did not know it at the time; but I have been told since that he was the person whose loud talk and blasphemy had been heard almost all over the town. The young man's face colored somewhat as he replied that he sometimes swore when he *felt like it*. My little prayer, "Lord, help," began to well up at once as I meditated on an answer that would not offend. I said something like this: "My dear friend, if I were in the habit of always doing every thing I *feel* like doing, I am afraid I should have landed ere this in the penitentiary." As soon as I had spoken I began to feel that perhaps my remark was not a very wise one after all. His lip curled with slight sarcasm, and a merry laugh went round the table as he looked at me and said quietly, "Very likely." I was almost an entire stranger in the community, and this brief reply was a little hard on me; but it all passed off as pleasantry, and of course I accepted it as such. There were these two doctors at the table—one an aged disciple of the allopathic school, and this younger one was a bright progressive disciple of homeopathy. The two had been bantering each other over the different methods of treatment frequently during my visit. They did not agree at all in regard to methods of treating disease. Notwithstanding, they *did* agree (it would seem) in regard to speaking lightly of the great Creator of all things.

I wonder how many there are who practice medicine who read GLEANINGS. Dear friends, is it true that *doctors* as a rule are in the habit of swearing? If it is true that some doctors and some surgeons of great skill are in the habit of deliberately taking God's name in vain, can it be true that the medical fraternity at large think it helps a man in his profession, or adds dignity to his character, to set such an example before others? God forbid! My friend,

if such has been your habit, let me implore you to pause and consider. May it not be that this habit of swearing which you have gotten into is one of the causes of these despondent spells you are having? Suicides are on the increase, so we are told. People are dissatisfied and unhappy, even when they have the greatest cause to be thankful. Has not the talk we indulge in, especially when we are vexed, something to do with it? The man or boy who takes God's name in vain can not long be a man or boy who enjoys life; and I believe Bro. Reed's keen, cutting, earnest words are true—that "he who takes the name of his Maker in vain is a *lost soul*" unless he repents, in the language of our text.



Since my last I have done a deal of traveling. One afternoon toward night I took a notion that I must see T. B. Terry's Thoroughbred potatoes. I got over the first 15 miles of my trip very nicely; but when I neared the Cuyahoga River I found I had a "picnic" ahead of me, as the boys call it. There are some terrible hills as you approach the river, and more of the same kind to match as you go up on the opposite side. With commendable thrift the people had worked the roads and put the hills in very much better order than ever before. It was done just before our recent June freshets. The soft new earth that had been brought up on to the roadway had been washed and gullied by the severe and repeated heavy rains until wheeling was not only out of the question, but it would have puzzled a team with a lumber wagon to get along. Of course, I had to walk, and carry my wheel. When I reached the valley it was too muddy to ride, even then. The soil had been washed in from the hillsides, so the roads were wellnigh impassable. It was lucky that my wheel weighed less than 20 lbs., and that I had on my lightest summer clothing. I had planned to reach friend Terry's before dark; but it was dusk before I was out of the valley. I had mounted and dismounted so many times that I was nearly tired out; and an unlucky slip of the foot threw me into a ditch. After I had climbed the hill on the other side, pushing my wheel, one of my first experiences was to run over a thorn in the darkness, puncturing my front tire. It was too dark for repairs, so I finished my route by pumping up my tire about every mile. As I neared the beautiful home of friend Terry the moon had risen, which had brought out the closely shaven lawn around the barn and along the roadside, making me think the place never looked so handsome before.

My many adventures had thrown me back so that the family had gone to bed; but as I had noticed a light in Robert's cottage (before I reached the parental home) I thought I would go back there and make inquiries. I meditated going to the nearest hotel; but as that was several miles away, and it was after bedtime, I concluded the necessity of the case would have to be my excuse for intruding at an untimely hour. Before I reached the cottage, however, the light there also was extinguished, and I pushed farther back to a neighbor's where people seemed to be up and stirring. They informed me there had just been a wedding in that neighborhood. The Terry family were

probably pretty well tired out by the event, and had gone to bed early.

The next morning there was a good deal of scolding because I had not waked the folks up, and they proposed that I be taught the combination of the lock on the kitchen door, so the next time I could walk in without any assistance from anybody, and make myself at home. Before I took my leave it was my pleasure to have a pleasant chat with the charming young bride (Robert's wife) in her own home at the cottage. Friend Terry's latest hobby seems to be home comforts. I wish our readers could see the new porch or porches he has been putting pretty nearly all around the home that I pictured to you in our little book, the *A B C of Strawberry Culture*, page 108. If we lived more outdoors we should be a healthier people. The colored folks down south never have consumption; and I think one great reason for it is, they live the greater part of the time entirely out of doors. Many of their houses have no windows, so their only means of lighting it up is by having the door swung wide open; therefore they never suffer from living in close rooms and their consequent impure air. Now, a great part of the year, even here in Northern Ohio, we can live outdoors if we take a little pains to fix up for it. H. T. Gifford, Vero, Fla., has large spacious porches, protected from insects by wire-cloth screens, and the family take their meals on this porch. Friend Terry spoke about taking their meals on the porch, and having his writing-table so he could sit and write right outdoors. People who can not stand a draft from open doors and windows have no trouble at all when they are right out in the open air. Do these things cost? Perhaps not as much as doctors' bills after all.

Friend Terry's other hobby, if that is the right name for it, is making a convenient kitchen so that his wife can do her own work without help. You see, the children are now all married, and in homes of their own. In the first place, he has a refrigerator close by both kitchen stove and pantry, that requires filling with ice only once a week. The manufacturers guaranteed it to keep every thing, when the ice-chest is filled that often, and a man brings the ice from town one day in each week. It does the business perfectly, and he has so far had ice to spare on every visit. I forget the expense every week, but it was only trifling.

The old Stewart stove that they have used for so many years is to be exchanged for a Stewart range. This interested me, because Mrs. Root still holds fast to the Stewart stove we used when we were first married. Water, both hot and cold, as well as fuel, are arranged right at hand as well as friend Terry's ingenuity could do it.

Close by is a very convenient and pretty bathroom, so planned that one may go from any of the bedrooms into the bathroom and back again without dressing up. I hope friend T. will give the world the result of his investigation and inquiries in regard to all real valuable late inventions for saving woman's work in her own home. In fact, he has partly described the things I have mentioned already, in that excellent home paper, the *Philadelphia Practical Farmer*.

Friend Terry's potatoes have hardly covered the ground as much as my own; but there are three reasons for it. First, he did not plant as early; second, my potatoes have not been flooded with rains to the extent his have, and others in his neighborhood. In many places his rich fertile soil has been washed from the hillsides into the ground, to the detriment of both hill and valley; third, a good many of my potatoes,

as you know, were planted whole, the sprouts being carefully preserved and utilized.

Lack of space compels me to describe my trip to the Storrs & Harrison establishment in our next issue.



It is now July 7. During the past month I have gone over quite a large part of the northern and middle portion of the State of Ohio, on my wheel and on the cars. Now, I do not want to boast; but permit me to say there are no potatoes anywhere that begin to compare with our own five or ten acres. There are potatoes that are looking very well in many places, and in some of the gardens there are some that look a good deal like our own; but nowhere have I seen any thing to compare with ours in the way of potatoes by the *acre*. We have several acres now of early planting, where the vines cover the ground so completely that it would be impossible to think of cultivating. In fact, such has been the case with most of them for two weeks past. If you lift up the vines you will see the earth broken and heaved up; and if you put down your finger you will find great smooth clean potatoes everywhere. The yield is certainly going to be something enormous; and I might think it was something in the variety were it not that all good varieties are yielding a good deal alike. A friend suggested the other day that I must have some photographs, for it was too good a sight to be lost. Now, it would not take any very great stretch of the imagination, or *conscience* either, to get a nice photo, and say right under it that it was the result of using a certain brand of potato fertilizer. We did put on Mapes' potato manure at the rate of about 400 lbs. per acre; and the temptation is very strong to say that *this* fertilizer, at least, had something to do with it. But when you come to look at the "nothing" strip, so far as the eye can determine there is no difference whatever. In fact, at one point the "nothing" looks about the finest of any part of our ground. When I say "nothing" it must be remembered, however, this means there was no *chemical* fertilizer applied. The ground was all heavily manured with old well-rotted compost unless it was where we turned under rye and crimson clover.

We have formerly been troubled very much with scab, especially where potatoes followed potatoes; but this season we purchased a barrel of sulphur, which was drilled in with the phosphate. Where this sulphur was applied, so far as we have dug the potatoes they are wonderfully clean and nice. But we can not very well tell until digging-time just how much better the sulphured plots are than the other.

But I want to talk a little more in regard to farming in Northern Ohio. Why, it would almost make a good farmer weep to look over the potato-patches in a great part of our State. I was going to say it is *just* as much work to take care of a poor crop as it is to take care of a good one. Why, my friend, it is a good deal *more* work to grow a poor crop. Some of our potatoes covered the ground so quickly that we hardly had a chance to put the cultivator in them at all. The Breed weeder did almost the whole of it; and I begin to think now that perhaps the cheapest way in the world to raise a crop of potatoes would be to keep the Breed weeder running over them from the day they

are planted until the vines cover the ground. Go through them, say every third day. You may be inclined to say at first that this would be a good deal of work; but just contrast it with waiting till the weeds are half an inch high, and then cultivating them with an old-fashioned cultivator, and going at it with a hoe, and hoeing out the weeds that the cultivator misses. Why, it is just awful. My impression is that, when you let the weeds get half an inch high, your potatoes have sustained an injury that they will never get over. Another thing, keeping the ground constantly stirred, making it a little finer every time you go over it, and, in fact, stirring it *every* day when it rains a little, seems to have a wonderful effect in making things grow. Somebody said recently, that growing crops need air as much as they do rain; and just as soon as we have a shower that is heavy enough to make a little crust on most soils it cuts off the air. In fact, the wet surface cuts off the air to some extent. Now, just as soon as it will do, stir up this wet or damp surface; break the crust, pulverize the lumps, and, if the shower is a light one, stir the wetness down into the ground before it evaporates. No wonder farming doesn't pay. I know prices are low; but it does not help matters for the farmer to become discouraged, and sit down and let the weeds grow. His expenses are just the same when he is idle and when his horses are idle as when he is at work. If prices are low, then cut down expenses. Stop buying expensive fertilizers that must be paid for in cash. Save the stable manure by the most approved methods; and what you lack in manure, make up by stirring the soil with the Breed weeder or some equivalent tool.

Yesterday I visited a branch of the experiment station, at Strongsville, O. It is in charge of Mr. Edward Mohn. This place was selected by Prof. Thorn because it seemed to be about the most unpromising piece of clay soil he could find in the State. When I inquired the way to the experiment farm at the store, the storekeeper said if young Mohn could succeed in raising good crops there he could grow them anywhere on the face of the earth. Well, the soil *is* poor—that is, the average farmer would call it poor; but Prof. Thorn, when he selected poor clay soil, selected a bright young farmer to manage it; and young Mohn has some very nice-looking crops of almost all kinds. How did he manage? Why, he underdrained the land, and then used stable manure. The stable manured plots were away ahead (almost every time) of those where heavy applications of commercial fertilizers were used. The latter show results, it is true; and with heavy applications the results are very satisfactory, but not equal to stable manure, and the expense is *ever* so much more. I asked friend Mohn if farmers around there availed themselves of the very valuable object-lessons that were to be found all over the hundred acres. He said that, while the larger part of them invested every year in fertilizers, scarcely one of them would take the trouble to look over the farm and see what the State is doing for their benefit. Some insist that it is cheaper to buy the fertilizer in bags than to haul out and spread their own barnyard manure. A great many find fault with the farm because he does not manage to raise bigger crops—as if the State hired him for no other purpose than to get large crops! A great many of his plots do not contain enough to pay for harvesting; but these very plots teach us the most valuable lessons. In one place they have a nice stand of soja beans. The direction was to drill them in as you do grain. Half of the plot is almost smothered with weeds, while the other half is almost perfectly clean,

and yet there has been no weeding or cultivating done on either of them. One half was put on a piece where all kinds of weeds went to seed last year. The other half is where clover sod was turned under. Now, this piece of soja beans gave me an object-lesson that was worth going miles to see. You can so manage your ground that many crops can be grown without any cultivating or weed-pulling.

A good many have found fault because the State pays the manager so large a salary compared with what the average farmers around him get on their farms. I do not know what the salary is; but I do know that young Mohn has a tremendous lot of work to do—especially brainwork. To keep his plots nicely labeled, and to record in proper books the treatment accorded to each one, it seems to me is more than one man can well do. He told me that, besides working hard all day in the fields, he had frequently worked at his books until 12 o'clock at night to carry out fully the instructions given him. What in the world is the reason that farmers should have a hostile spirit toward the experiment stations, weather bureaus, etc., when the State is doing so much to get farmers out of old ruts, and to induce them to work intelligently?

I omitted mentioning in the proper place, that, while at Wooster, Ohio, I looked through their very complete cellars for storing potatoes. The first apartment is a room inside of a cellar under the barn. If you want a place where you can keep a cellar from warming up in hot weather, it ought to be a tight inclosure inside of the cellar proper. We found potatoes in this room in such good condition in the latter part of June that it seemed to me it was almost all that could be desired; but after I went into the cold-storage cellar adjoining, and saw potatoes there that looked as if they had just been dug, when they had really been there for nine or ten months, I began to think the cold-storage room would be a splendid thing after all for one who grows and sells seed potatoes. The temperature had been kept between 30 and 40 degrees, if I remember correctly. Now, this cold-storage room was a very simple affair. You first make a tight room. It ought to be almost air-tight. Have the ceiling so high that there will be room for a large box or vat, to be supported overhead, to contain the ice. This ice-box is water-tight. One corner is a little lower than the others, and has a drip-pipe to carry off the water from the melted ice. This is all there is to it. Hot air rises to the ceiling of any room; but cold air falls to the floor; therefore the cooling-material must be placed near the ceiling. As long as there is ice in this box over your head, the temperature of the room remains but little above the melting-point of ice. Prof. Green told me there was no trouble in keeping apples, potatoes, or almost any thing else; but the great drawback is, when you take things out of this room, and expose them to a summer temperature, they decay much quicker than where kept in a cellar where no ice is used. I presume potatoes should be planted pretty soon after being taken from the cold-storage room.

A GLIMPSE OF THE VEGETABLE-WAGON BELONGING TO J. W. NICODEMUS, NEWCOMERTOWN, OHIO.
ALSO AN ACCOUNT OF HIS WORK, WRITTEN
BY E. E. SMOCK, SUPERINTENDENT OF
THE NEWCOMERTOWN HIGH
SCHOOLS.

The cut represents the delivery wagon for the vegetable farm of Nicodemus and family, Newcomertown, O.

Four years ago Jown W. Nicodemus, plasterer and brick mason, deemed himself happy when he found his surplus earnings for a dozen years

amounted to one hundred dollars; he is now the proud possessor of a magnificent river-bottom garden of nearly half a hundred acres, located within the corporation limits, and upon which debt has no incumbrances. From his earliest youth "Nicky," as he is familiarly called, had known naught but the closest privation and the severest toil; but he came through these years of discouraging apprenticeship light hearted, sober, industrious, honest. His first good fortune was in his marriage; his second, his children, of which he has two, both of whom appear in the picture.

Anna, aged twenty, stands at the rear of the wagon, in the act of handing to a customer a basket of lettuce. Too much can not be said in favor of this splendid little lady. She has beauty of form and manner; she is richly endowed intellectually; she cultivates a high taste for music; she apparently gives no thought to the lighter amusements of youth, but, with the unconsciousness of a child, she goes about her work; the embodiment of the kindly spirit of home, the encouraging genius of father, mother, and brother, and, above all, in a business sense, the confidential adviser of a large circle of friendly patrons on matters pertaining to garden products. Her father never tires of telling what "Annie has done for all of us."

Oscar, a promising youth of sixteen, is standing near the front end of the wagon, handing to another customer a bunch of radishes. Oscar is not yet through school, where he holds an honorable place; however, he is developing a deep interest in the heavier work about the farm, and manages the tasks assigned to him with a discretion far above his years. He will soon have charge of an additional delivery wagon, which the growing business of a growing town and a growing garden demands. His natural endowments are equal to those of his sister. Quick to learn, anxious to do, frank and honest, he controls the destinies of a bright and noble future.

Mrs. Nicodemus is the peer of her husband and children, a master in the management of her home, and her poultry is sought after by all who can appreciate the merits of a good table. She is entitled to a full share of credit in the remarkable prosperity of her family.

The personals of this account would be incomplete if no mention were made of Grandma Nicodemus, now in her eighty-eighth year. She is not an invalid. She possesses the true will power of Germany. Three years ago she paid no respect to the wishes of her son, but went out into the field, and in one day picked one hundred and four quarts of strawberries, while this year she has not been permitted to work in the field; yet she persists in doing full service in the kitchen.

The Nicodemus gardens are located on the north bank of the Tuscarawas River. The bottoms are elevated, sandy, slightly rolling, naturally fertile, and have been continually renewed with stable manure and by clover culture. They cover in all nearly sixty acres. This year there are nearly seventeen acres in berries and vegetables. On the north the garden is bounded by one of the principal streets of Newcomertown. Here are greenhouses and hotbeds with extensive contrivances for steam heating. Near the boiler-room stands a 130-barrel water-tank which is kept filled by a 12-foot aeromotor. This machine also grinds corn, chops feed, and cuts straw and fodder. East of the buildings are the vegetable-lots where are growing in almost tropical profusion peas, beans, cabbages, cauliflowers, cucumbers, radishes, onions, rhubarb, celery, sweet potatoes, asparagus, and other garden plants. Even the daily deliveries do not seem to reduce the quantity. To the south, stretching away to the river, are fields of melons, potatoes, tomatoes, and corn. Interspersed among these, and in places deemed the most favorable, are growing $1\frac{1}{2}$ acres of raspberries and $2\frac{1}{2}$ acres of strawberries.

The proprietor was quite hopeful, when he set out the raspberries; but, through some cause unknown to him, they grew healthy in vine but without fruit; however, this year they have yielded him 103 bushels, which were placed on the market at \$1.92 per bushel. This was the last year of their probation, and the scythe had been sharpened for their destruction. They will remain. The three chief varieties are the Gregg, the Hillbinn, and the Souhegan.

It may be that the backwardness of the raspberries is due to the fact that chief attention has been paid to the strawberry. Here it is that the money has been made. This year 250 bushels have been

sold from the wagon, netting \$450. The largest day's sales were 37 bushels. The entire crop sold at an average of \$1.80 per bushel, net. Mr. Nicodemus has given special attention to the adaptability of different varieties to soil, having tried the Bubach, Parker Earle, Haverland, Sterling, Warfield, and, to a limited extent, the Marshall and Timbrell. While he has placed none of the latter on the market, yet the few baskets with which he has complimented his friends present none of the disadvantages of color so often attributed to them in this journal; however, he can speak more to the point next year, as he will have half an acre to test from. He gives the highest recommendation to the Bubach and to the Parker Earle, they growing larger, firmer, appearing better upon reaching the market, and giving a better satisfaction to his home patrons, where, by the way, he sells his produce.

Just as human nature has inherited a hatred of snakes, so has it inherited a love for a garden; and one never tires in wandering through this beautiful garden in this most beautiful valley. The garden itself greets a visitor as though conscious of its mission in the fulfillment of promise, and the proprietor emphasizes that greeting by placing before the visitor the richest fruit of the garden with the bluff, hearty injunction to "eat and be filled."

Newcomerstown, Ohio.

E. E. SMOCK.

The wagon shown in the cut was purchased, I think, of the Ohio Carriage Co., Columbus, O. As nearly as I can recollect, the expense was only about \$75.00. Friend Nicodemus said they made it over a little, I believe, in order to suit his special purpose. An account of my visit to friend N. will be found on page 201, GLEANINGS for March 1, 1894.

WHITTAKER ONIONS—PLANTING THEM EARLY.

Our Whittaker onions are now ripe, and most of them gathered. I wrote to Dr. Martin, the introducer, asking him why they could not be planted now instead of waiting till September or October. Below is his reply:

You can plant your onions just now, and they will be safe, and really safer than anywhere else; but they will not start for a long time yet, and you will have the ground to cultivate to keep the weeds down; but if you wait till wheat-seeding time you can set them in freshly prepared soil that may now be in potatoes, and the crop not get ripe.

Mercersburg, Pa., July 8. DR. T. M. MARTIN.

Very likely friend Martin is correct. If the onions do not commence to grow until cool weather, we certainly do not wish to be to the trouble of keeping the ground free from weeds; and then his point of putting them in where potatoes have been dug is a good one. Ours have given us the finest crop of large solid firm onions we ever raised before on the same amount of ground. About a year ago Dr. M. advised us to plant the onions about the time farmers were sowing wheat. Probably this will be the best time.

WHAT TO PLANT IN THE MIDDLE OF JULY.

Almost every thing mentioned on page 511 in our last issue, calculating, of course, on two weeks later on things that are liable to be cut off by early frost. Those who are going to put in crimson clover should get it into the ground during the next 30 days if possible—that is, for northern localities. Last season it seemed to do better when sown with buckwheat, or cultivated in with early sweet corn; but with the ample rains we are having in our locality it would, without question, get a good start, even without any shade or protection. Some more experiments in this line are needed.

All kinds of forage-plants or green stuffs to turn under can be put in now. Everybody knows about sweet corn for fodder, but everybody does not know about Essex rape, cow peas, soja beans, Kafir corn, etc. If you don't do any thing more, you had better have a little patch in your garden to see how the new plants

—especially the leguminous—behave in your locality. Of course, the bean family would be likely to be cut by frost before the seeds ripen. The Essex rape, however, will stand as much frost as almost any other plant known unless it be seven-top turnip. This, ordinarily, stands out green all winter long.

Celery-plants can be put out until the first of August. In fact, with good rich garden ground one may get nice celery, if he has good strong transplanted plants to put out, almost any time in the month of August. If you do not have abundant rains, of course you will have to supply the needful water.

It is a very good time now, if you have good strong plants, for setting out late cabbage. If you are working on high-pressure gardening, something should go into every piece of ground the very day it can conveniently be cleared of the former crop. With the rains we are now having here, I should call the middle of July the very best month in the year to set out strawberry-plants. I know a good many do not agree with me; but on our rich grounds we put out strawberries all the time during the summer months; and when it rains enough so as to get them started, we have always found the earlier the better—that is, after we can get good strong well-rooted new plants.

THE MARSHALL STRAWBERRY.

I am beginning to think a good deal of this variety, even if it does not bear such loads of berries as the Haverland, Parker Earle, and some others. At present writing, July 14, the bed across the street from where I write is still bearing nice handsome berries; and there have been more or less berries every week since the last of March. It was protected by glass during the latter part of winter, mind you, and therefore commenced fruiting in March. Now, I do not know whether this is a peculiarity of the Marshall, or whether it was the very rich ground and special treatment. As it is a perfect variety, we do not need to bother with any other kind to put with it.

Special Notices in the Line of Gardening, etc.

By A. I. Root.

MAULE'S THOROUGHbred POTATOES; 36 BARRELS FROM 1, HARVESTED AT GOLDSBORO, N. C.

Friend Root:—The barrel of Thoroughbred potatoes you had Mr. Maule send me, to grow under contract for you so as to plant product and grow a second crop, are all dug. They were all fully matured July 1st. I grew from the barrel planted in March, 36 barrels of very pretty potatoes. They are fully cured, solid, and firm, with many of them now showing sprouts at the seed ends. There will be no more trouble to get these potatoes to come up, if planted deep enough to prevent heat of sun penetrating to seed pieces, after they are planted, than it is to get last year's crop to sprout in spring. They should be planted three or four inches deep in mellow soil, as soon as they begin to sprout. Harrow or drag off ridges till potatoes are only about two inches under ground.

Cultivate rapidly after they come up, and it will be no trouble to grow a second crop in northern latitudes, planted any time prior to August 10, and in Middle and Southern States any time prior to September 1st. The great value in the second crop lies in getting large-sized tubers that will be immature at digging, so they will ripen after they are housed. If the second crop matures its tubers they are no better for seed in the following spring than first crop are. This is Prof. W. F. Massey's statement, and I agree with him.

As you can see, from the fact I grew 36 barrels from one of seed, the Thoroughbreds are wonderful yielders; and, by the way, it is the only high-priced potato Mr. Maule has introduced that were of any value here. I tested his Freemans and Irish Daisies.